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This study sought to determine over-all growth patterns of employment in health related establishments, to project needs for 48 selected occupations through 1973, and to identify current job opportunities, training needs, and employment problems. With medical and health services growing so fast, federal agencies predict an average need of 10,000 workers per month through 1975. In North Carolina alone, employees in the surveyed services exceeded 66,000 in early 1967, and employers forecast about a 30% increase in health service jobs by 1973, raising the total above 85,000. Currently the greatest need is for registered nurses. About 80% of all personnel is expected to come from schools, on-the-job training, and the presently unemployed, leaving an unmet need for about 3900 workers. This report gives charts and tables detailing and correlating the six types of employing institutions surveyed (hospitals, rest homes, laboratories, offices, etc.), the 48 different occupations examined (nurse, medical technologist, orderly, etc.), anticipated employment by occupation, distribution of employment by sex, current job vacancies, projected manpower supply, types of training facility, statewide and area surveys, changes by number and percentage, anticipated additions to health services, etc. Appendices include definitions from the Dictionary of Occupational Titles for all the occupations studied, a list of non-surveyed occupations considered in short supply by sampled employers, and the methodology and scope of the study. (HH)

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HEALTH MANPOWER NEEDS in North Carolina 1967-1973

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The North Carolina Dental Society
The North Carolina Nurses' Association
The North Carolina Fund
The State Department of Public Welfare
Health Careers for North Carolina
The Department of Community Colleges

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Within the Employment Security Commission, we appreciate the cooperation of the Department of Data Processing, the Duplicating Unit and the local Employment Security Commission office staff members who assisted survey personnel.

The survey was conducted under the direction of Lonnie D. Dill, the Bureau's Assistant Director. Research Analysts Jim Mills, Lamar Bowers, and Reuben Edwards were responsible for planning and supervising the study and for dratting this report. Other staff members assisting were Arleene Holloway and James Bonner, Labor Market Analysts.

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December, 1967

Pictures courtesy of Wake County Memorial Hospital
Raleigh, North Carolina

EMPLOYMENT SECURITY COMMISSION
OF NORTH CAROLINA

HENRY E. KENDALL, *Chairman*

Health Manpower Needs In North Carolina 1967-1973

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INTRODUCTION TO SURVEY FINDINGS

The continuing manpower problems in medical and health service occupations, prompted the State Board of Education and the Employment Security Commission to undertake this statewide study of manpower needs in North Carolina's medical and other health facilities.

Existing vocational training and counseling programs have provided health service facilities with badly needed trained workers. While this approach has been of great benefit, it has not been sufficient to meet all the occupational needs resulting from the increased staffing demand placed upon health service facilities by the recently enacted medicare legislation and from the growing emphasis placed by the general public on personal care.

In order to evaluate the impact of existing training programs and to more effectively plan future programs, factual information on the current and future manpower needs in health service occupations is of primary importance. In addition to providing data to school authorities engaged in planning curricula, this study was designed to provide information to aid health service administrators in planning for their own occupational needs; to assist employment service personnel in counseling, placement and recruitment programs; to guide Community leaders in developing MDTA training programs; and to aid Health Careers personnel in their efforts to channel young people into training for occupations in the medical and health service field.

The purposes of the study were to determine overall establishment employment growth patterns and the needs for selected occupations through 1973; identify current job opportunities and training needs; and to recognize existing employment problems.

Anticipated net training needs were determined by adding the projected total number of workers needed for expansion and replacement (excluding turnover) minus the expected supply from schools, on-the-job training and the experienced unemployed. Some occupations, such as Registered Nurse, Licensed Practical Nurse, Nurse Aid, and Radiologic Technologist, experience a significant amount of turnover; therefore, more trained workers may be needed at any given time for these occupations than the data indicate. Further, the study reflects schooling being conducted within the area but does not measure the out-migration of persons completing school, since for many reasons, persons completing courses of study may go to other areas to seek employment.

The first part of this study covers National Trends, and some suggestions by prominent educators and economists as to how some medical and health service manpower problems might be solved, and highlights of this study. Part II includes an analysis of Statewide Employment Trends in Surveyed Facilities and Part III shows Statewide Trends by Occupation. Part IV presents Area Findings. The Appendices include Definitions, Additional Tables and Methodology and Scope.

PART I

National Trends and Study Highlights

NATIONAL TRENDS IN MEDICAL AND HEALTH SERVICE MANPOWER

Medical and health service is one of the fastest growing industries in the nation—outranked only by education in rate of employment growth. Far reaching federal legislation has pushed the need and demand for health service personnel to an all time high. The establishment of the Medicare program was largely instrumental in creating demands for added workers in hospitals, nursing homes, and rest homes.

In 1966, there were over 3,000,000 workers employed in all health service occupations. The Department of Health, Education and Welfare estimates that in health services alone, an average of 10,000 workers per month will be needed through 1975.

Leaders in the fields of medical and health service and education have experienced the problems arising from the growing shortage of workers, and have recognized needs for additional trained personnel.

Public and private educational institutions are offering more comprehensive training in health service occupations and related fields. The responsibility for some types of training is shifting away from clinical agencies to educational institutions due to economic consideration and the tendency of high school graduates to prefer a college environment.

Even with increased training, shortages among some skilled groups are becoming critical. The health service industry is unable to attract a sufficient number of qualified individuals to enter and remain in the field.

On the following page are some thoughts and suggestions as to what can be done to help solve manpower problems in medical and health service occupations:

DR. LOWELL T. COGGESHALL

Vice President of the University of Chicago

Education for the health professions and their co-workers at all levels must be re-examined and strengthened. New and continuing incentives to attract all people, including the underprivileged, to the health field must be developed. An outstanding example is the vast reservoir of unskilled persons from which to expand and improve the health manpower situation. A significant part of this reservoir involves the youth of low income families. This important national health resource has yet to be adequately tapped. Furthermore, many disadvantaged might achieve useful and productive employment in the health fields even though they may not be qualified for professional education. We must find a way to reach into all economic strata to augment the health manpower pool.

Experience and education can be transferable and provide for the development of new type of health professional. . . . Horizontal and vertical mobility will become more and more essential if we are to break down the artificial barriers which separate one segment of the health manpower pool from another. We must find positive means to encourage persons of ability to move up the career ladder as their talents permit.

DR. WILLIAM H. STEWART

Surgeon General of the United States

Artificial barriers separate one stratum of the health manpower pyramid from another, buttressed by such considerations as academic credits. Can we devise career ladders to permit the highly capable practical nurse to move into professional nursing, the professional nurse into medicine, the hygienist into dentistry? Wouldn't all the disciplines ultimately gain from such vertical mobility?

PROFESSOR ELI GINZBERG OF COLUMBIA UNIVERSITY

Chairman of the National Manpower Advisory Committee

It is always an error to focus on increasing the supply without simultaneously considering the wage structure and utilization patterns. If the latter are awry then, no matter how many are recruited and trained, the supply will still be inadequate since dissatisfied workers will leave. The wage structures are still out of line with the market in many paramedical fields. . . . If wages and working conditions are made competitive, good training can help attract and retain the expanding numbers that will be required. . . . Adequate education and training opportunities must exist not only for persons entering the field, but also be built into the career process and be tied to promotional opportunities. . . . Unless steps are taken to facilitate upgrading of persons even across professional lines—i.e., nurses and physicians; professional nurses and practical nurses—much manpower will remain underutilized. . . . The unfreezing of many existing barriers in and among professional and semiprofessional groups cannot be left solely to them. It requires the participation of third parties—educational authorities, financial agencies (insurance), government.

SOURCE: *Manpower Research Bulletin, Number 14, May 1967*
U. S. Department of Labor

STUDY HIGHLIGHTS

Total employment in North Carolina in the surveyed health service establishments exceeded 66,000 during the spring of 1967.

Employer forecasts show about a 30 percent increase in health manpower employment by 1973, with total employment in health facilities expected to rise above 85,000.

Hospitals employed 73 percent of the personnel working in the studied medical and health service facilities.

Almost 83 percent of the jobholders in the surveyed occupations were female.

At survey time, approximately 49,800 of the nearly 53,900 available beds in hospitals, nursing homes and rest homes were being utilized. Health service facilities plan to add over 7,300 beds, during the next six years.

Just over 62 percent of all employment in the surveyed medical establishments is located in seventeen major counties in the State. A breakout by area is found on page 20.

In the spring of 1967, employers indicated a need for almost 2,900 trained workers in the 48 selected study occupations. Currently, Nurse, Registered, is the occupation showing the greatest need for added personnel. Employers expressed a need at survey time for over 850 additional registered nurses.

According to survey data, employers will require, for the 48 occupations studied, over 25,000 additional trained workers for expansion and replacement needs by the spring of 1973; and, that expansion needs alone in the studied occupations are expected to total about 15,000. Over one-half of the new jobs will occur in the field of nursing and related services.

The supply from schools, on-the-job training and the unemployed is expected to furnish roughly 80 percent of the personnel needed to meet health facility requirements; leaving a combined net, unplanned and unmet need for training about 3,900 additional workers in certain selected health occupations.

PART II

Statewide Survey Findings by Type of Facility

ANTICIPATED MANPOWER TRENDS IN HEALTH FACILITIES 1967 TO 1973

Total employment in the surveyed health service establishments is expected to increase by roughly 12,150 and 19,400 by the spring of 1970 and 1973, respectively.

Hospital needs will account for nearly three-fourths of the employment increase during this six-year period. Every type of medical and health service facility surveyed forecasts an employment gain in both projection periods.

Survey data indicate dentists' offices anticipate the highest rate of employment growth by spring, 1970. Rest homes expect the smallest numerical employment gains and rate of growth by both 1970 and 1973.

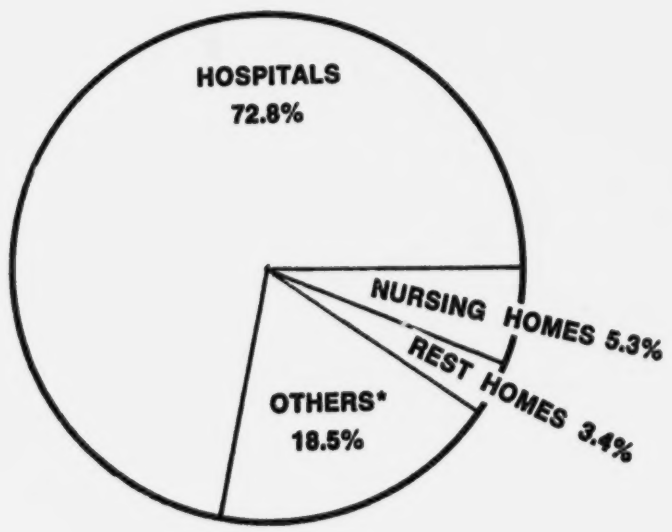
Of the nearly 2,900 job vacancies, at survey time, slightly over 2,100 were reported by hospitals. Dentists' offices were second with almost 350 unfilled job openings. (See Table XIV, Page 57).

Chart A, following, shows the 1967 and 1973 distribution of employment by type of facility. The significance of the Chart A distribution is to show but little change is anticipated in the employment structure.

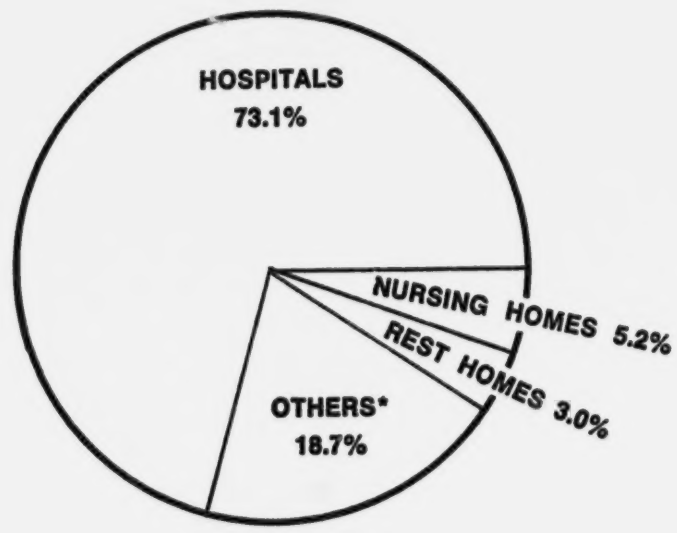
Chart B and Table I show projected numerical and percentage changes in surveyed establishment employment by 1970 and 1973.

CHART A: DISTRIBUTION OF CURRENT AND ANTICIPATED EMPLOYMENT IN SURVEYED ESTABLISHMENTS

SPRING, 1967



SPRING, 1973



**Includes Health Departments, Welfare Departments, Dental Laboratories, Pathology Laboratories, Dentists' offices and Physicians' offices.*

CHART B: EMPLOYMENT TRENDS IN SURVEYED ESTABLISHMENTS—1967-1970 AND 1967-1973

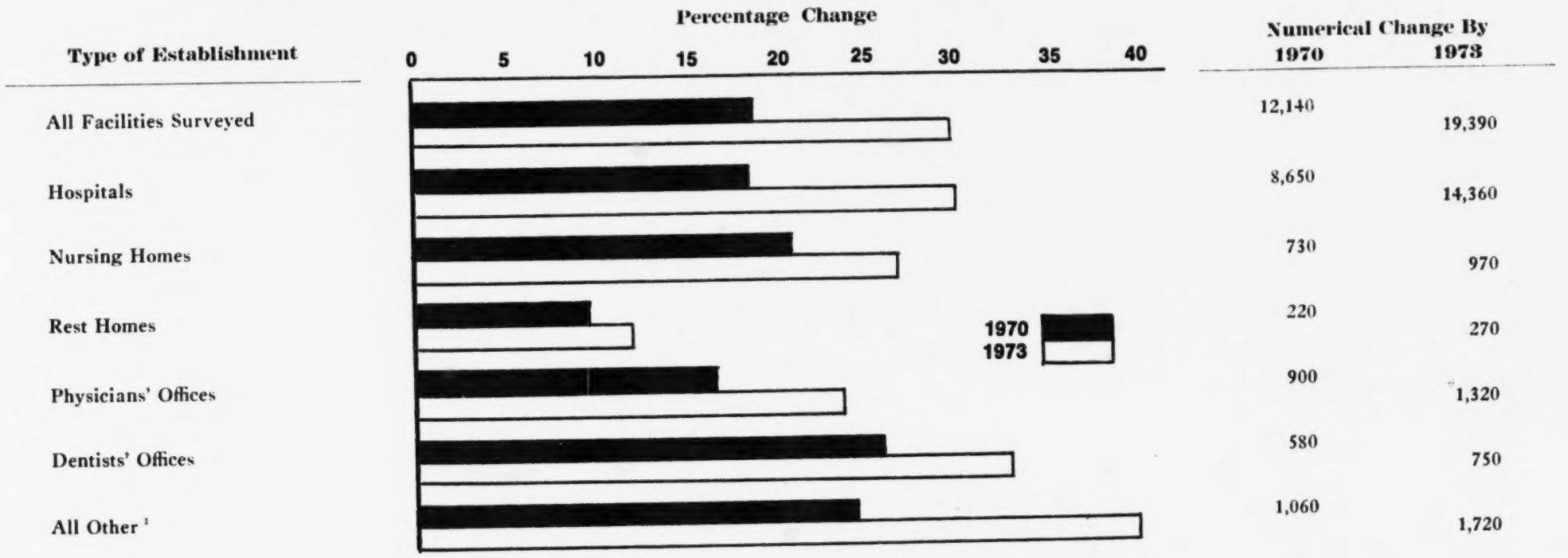


TABLE I: PERCENTAGE INCREASE IN TOTAL EMPLOYMENT BY TYPE OF ESTABLISHMENT FROM SPRING 1967 TO SPRING, 1970 AND 1973

Type of Establishment	Number of Establishments Surveyed	Employment Spring, 1967	Anticipated Employment			
			Spring 1970	Percentage Change	Spring 1973	Percentage Change
All Facilities Surveyed	1,540	66,090	78,230	18.4	85,480	29.3
Hospitals	190	48,140	56,790	18.0	62,500	29.8
Nursing Homes	95	3,490	4,220	20 9	4,460	27.8
Rest Homes	290	2,260	2,480	9.7	2,530	12.0
Physicians' Offices	550	5,550	6,450	16 2	6,870	23.8
Dentists' Offices	255	2,300	2,880	25.2	3,050	32.6
All Other [1]	220	4,350	5,410	24.4	6,070	39.5

[1] *Includes Health Departments, Welfare Departments, Dental Laboratories and Pathology Laboratories*

PART III

Statewide Survey Findings by Occupations

EMPLOYMENT OUTLOOK, BY OCCUPATION

TABLE II: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS 1967-1970 AND 1967-1973

OCCUPATIONAL TITLE	Sampled Employment Spring—1967	Job Vacancies Spring—1967	Anticipated Manpower Requirements by Spring—1970 and 1973				Turnover Needs	Anticipated Trained Manpower Available by Spring—1970 and 1973					Anticipated Net Training Needs[1]	
			Expansion Needs		Replacement Needs			From-On-The Job Training		From Schools		From The Unemployed	By Spring	
			1970	1973	1970	1973	Prior Twelve Months	1970	1973	1970	1973		1970	1973
TOTAL—ALL OCCUPATIONS	45,609	2,898	10,100	15,084	5,011	10,021	10,532	2,229	3,282	9,641	17,546	364	2,881	3,917
Administrator	510	8	14	21	36	72	27	0	0	59	107	0	−9	−14
Administrative Assistant	264	5	61	93	18	36	10	1	3	0	0	3	75	123
Admitting Clerk	414	10	102	173	57	114	136	13	23	0	0	7	139	257
Admitting Officer, Chief	87	0	8	14	3	6	6	0	0	0	0	0	11	20
Child Care Attendant	82	7	66	91	0	0	32	64	89	0	0	4	−2	−2
Cottage Parent	1,304	6	133	178	69	138	69	84	124	0	0	0	118	192
Cook	1,517	36	167	249	171	342	234	31	64	0	0	24	283	503
Cytotechnologist	51	5	17	35	3	6	10	0	0	22	40	0	−2	1
Dental Assistant	1,796	60	241	299	570	1,140	437	304	391	190	376	12	305	660
Dental Hygienist	153	253	343	410	90	180	37	6	6	285	520	0	142	64
Dental Laboratory Technician	206	44	126	197	54	108	33	24	49	54	108	0	102	148
Dietitian	281	22	160	186	66	132	31	0	0	47	83	0	179	235
Director, Volunteer Services	40	2	19	23	0	0	2	2	2	0	0	0	17	21
Electrocardiograph Technician	93	1	27	48	9	18	21	6	14	0	0	0	30	52
Electroencephalograph Technician	29	0	11	23	0	0	8	4	6	0	0	0	7	17
Housekeeper	410	22	85	121	69	138	82	18	29	0	0	0	136	230
Home Health Aid	14	14	103	154	0	0	0	31	39	118	198	1	−47	−84
Homemaker	107	16	155	232	15	30	12	104	175	0	0	0	66	87
Inhalation Therapist	57	19	67	106	4	7	12	10	14	44	74	0	17	25
Insurance Clerk	469	13	108	186	42	84	95	15	32	0	0	0	135	238
Medical Laboratory Assistant	453	24	134	223	27	54	100	61	77	196	384	1	−97	−185
Medical Librarian	36	1	8	13	3	6	2	0	1	0	0	0	11	18
Medical Office Assistant	2,611	33	379	553	612	1,224	481	210	259	48	72	8	725	1,438
Medical Record Librarian	170	17	38	58	27	54	23	1	2	41	101	0	23	9

[1]*Total number of workers needed for expansion and replacement (excluding turnover) minus the supply from schools, on-the-job training and the experienced unemployed. This definition applies to "Net Training requirements," as referred to throughout this report.*

TABLE II: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS—Continued

1967-1970 AND 1967-1973

OCCUPATIONAL TITLE	Sampled Employment Spring—1967	Job Vacancies Spring—1967	Anticipated Manpower Requirements by Spring—1970 and 1973				Turnover Needs	Anticipated Trained Manpower Available by Spring—1970 and 1973					Anticipated Net Training Needs[1]	
			Expansion Needs		Replacement Needs			From-On-The Job Training		From Schools		From The Unemployed	By Spring	
			1970	1973	1970	1973	Prior Twelve Months	1970	1973	1970	1973		1970	1973
Medical Record Clerk	525	22	135	209	54	108	142	10	15	0	0	1	178	301
Medical Supply Clerk	374	10	54	115	30	60	94	7	19	0	0	2	75	154
Medical Technologist	1,089	90	297	454	144	288	213	0	0	323	625	2	116	115
Nurse Aid	8,044	245	1,299	1,961	564	1,128	2,340	516	751	1,518	2,247	124	−295	−33*
Nurse, Licensed, Practical	4,204	475	1,337	1,955	441	882	663	0	0	2,114	3,741	8	−344	−912*
Nurse, Public Health	700	45	178	280	87	174	65	0	0	0	0	0	265	454
Nurse, Registered	8,415	863	1,974	2,897	798	1,596	1,713	0	0	3,232	6,349	6	−466	−1,862*
Occupational Therapist	44	8	25	34	6	12	5	0	0	0	0	0	31	46
Occupational Therapy Aid	55	3	15	18	0	0	6	7	7	0	0	0	8	11
Orderly	2,283	168	545	761	198	396	972	234	371	224	320	23	262	443
Orthopedic-Cast Specialist	9	0	1	3	0	0	0	0	1	0	0	0	1	2
Pharmacist (Hospital)	149	15	48	69	24	48	18	0	0	280	670	0	−208	−553
Pharmacy Helper	118	5	41	64	12	24	34	7	18	0	0	1	45	69
Physical Therapist	141	34	87	117	21	42	26	0	0	99	168	1	8	−10
Physical Therapy Aid	103	10	61	98	3	6	29	16	28	0	0	0	48	76
Porter	1,321	104	306	466	114	228	748	94	144	0	0	102	224	448
Psychiatric Aid	2,545	12	58	88	168	336	408	16	19	224	424	6	−20	−25
Radiologic Technologist	759	34	192	363	132	264	151	67	84	428	794	2	−173	−253*
Recreational Therapist	87	15	37	49	9	18	13	0	0	0	0	0	46	67
Sanitarian	269	10	69	98	45	90	19	0	0	0	0	4	110	184
Sanitarian Aid	32	2	39	62	6	12	2	10	13	0	0	0	35	61
Surgical Technician	376	42	115	207	9	18	100	49	70	0	0	0	75	155
Ward Clerk	949	39	274	429	90	180	333	99	142	95	145	8	162	314
Ward Maid	1,864	29	341	601	111	222	538	104	197	0	0	14	334	612

[1]Total number of workers needed for expansion and replacement (excluding turnover) minus the supply from schools, on-the-job training and the experienced unemployed. This definition applies to "Net Training requirements," as referred to throughout this report.

**See introduction to Survey Findings Page iv.*

TABLE III:

ANTICIPATED EMPLOYMENT TRENDS BY OCCUPATION

1967 TO 1973

Total Occupational Employment 1967	Numerical Change 1970	Numerical Change 1973	Percentage Change 1970	Percentage Change 1973	OCCUPATION
45,609	10,100	15,084	22.1	33.1	TOTAL—ALL OCCUPATIONS
510	14	21	2.7	4.1	Administrator
264	61	93	23.1	35.2	Administrative Assistant
414	102	173	24.6	41.8	Admitting Clerk
87	8	14	9.2	16 1	Admitting Officer, Chief
82	66	91	80.5	111.0	Child Care Attendant
1,304	133	178	10.2	13.6	Cottage Parent
1,517	167	249	11.0	16 4	Cook
51	17	35	33.3	68.6	Cytotechnologist
1,796	241	299	13.4	16.6	Dental Assistant
153	343	410	224.2	268.0	Dental Hygienist
206	126	197	61.2	95.6	Dental Laboratory Technician
281	160	186	56.9	66.2	Dietitian
40	19	23	47.5	57.5	Director, Volunteer Services
93	27	48	29.0	51.6	Electrocardiograph Technician
29	11	23	37.9	79.3	Electroencephalograph Technician
410	85	121	20.7	29 5	Housekeeper
14	103	154	735.7	1,100.0	Home Health Aid
107	155	232	144.9	216.8	Homemaker
57	67	106	117.5	186.0	Inhalation Therapist
469	108	186	23.0	39.7	Insurance Clerk
453	134	223	29.6	49.2	Medical Laboratory Assistant
36	8	13	22.2	36.1	Medical Librarian
2,611	379	553	14.5	21.2	Medical Office Assistant
170	38	58	22.4	34.1	Medical Record Librarian

— continued —

TABLE IV:

DISTRIBUTION OF SURVEYED OCCUPATIONAL EMPLOYMENT BY SEX

SPRING 1967

Total Employment Spring 1967	Male Number Employed	Male Percent	Female Number Employed	Female Percent
45,609	8,006	17.6	37,603	82.4
510	285	55.9	225	44.1
264	127	48.1	137	51 9
414	43	10.4	371	89.6
87	17	19.5	70	80.5
82	30	36.6	52	63.4
1,304	596	45.7	708	54 3
1,517	413	27.2	1,104	72.8
51	4	7.8	47	92.2
1,796	12	0 7	1,784	99.3
153	1	0.7	152	99.3
206	152	73.8	54	26.2
281	8	2.8	273	97.2
40	4	10.0	36	90 0
93	6	6.5	87	93.5
29	3	10.3	26	89.7
410	91	22 2	319	77.8
14	0	0	14	100.0
107	1	0.9	106	99.1
57	38	66.7	19	33.3
469	10	2.1	459	97 9
453	112	24.7	341	75.3
36	0	0	36	100.0
2,611	26	1.0	2,585	99.0
170	3	1 8	167	98.2

TABLE III:

ANTICIPATED EMPLOYMENT TRENDS BY OCCUPATION

1967 TO 1973

—CONTINUED—

Total Occupational Employment 1967	Numerical Change 1970	Numerical Change 1973	Percentage Change 1970	Percentage Change 1973	OCCUPATION
525	135	209	25 7	39.8	Medical Record Clerk
374	54	115	14 4	30.7	Medical Supply Clerk
1,089	297	454	27.3	41.7	Medical Technologist
8,044	1,299	1,961	16 1	24.4	Nurse, Aid
4,204	1,337	1,955	31.8	46.5	Nurse, Licensed, Practical
700	178	280	25.4	40.0	Nurse, Public Health
8,415	1,974	2,897	23.5	34.4	Nurse, Registered
44	25	34	56.8	77.3	Occupational Therapist
55	15	18	27 3	32.7	Occupational Therapy Aid
2,283	545	761	23.9	33.3	Orderly
9	1	3	11.1	33.3	Orthopedic-Cast Specialist
149	48	69	32.2	46.3	Pharmacist (Hospital)
118	41	64	34 7	54.2	Pharmacy Helper
141	87	117	61.7	83.0	Physical Therapist
103	61	98	59.2	95.1	Physical Therapy Aid
1,321	306	466	23.2	35.3	Porter
2,545	58	88	2 3	3.5	Psychiatric Aid
759	192	363	25.3	47.8	Radiologic Technologist
87	37	49	42.5	56.3	Recreational Therapist
269	89	98	25.7	36.4	Sanitarian
32	39	62	121 9	193.8	Sanitarian Aid
376	115	207	30.6	55.1	Surgical Technician
949	274	429	28.9	45.2	Ward Clerk
1,864	341	601	18.3	32.2	Ward Maid

TABLE IV:

DISTRIBUTION OF SURVEYED OCCUPATIONAL EMPLOYMENT BY SEX

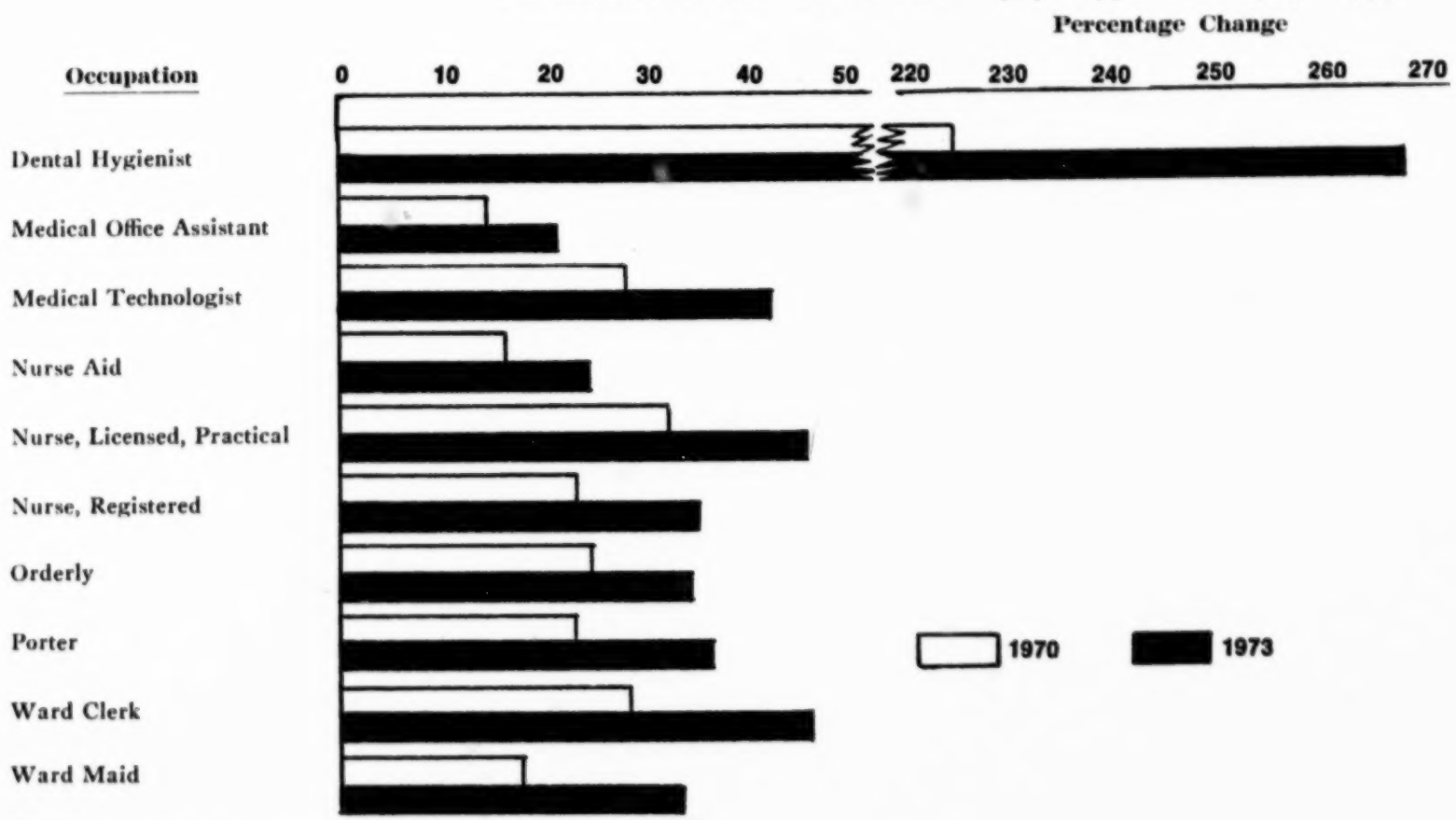
SPRING 1967

Total Employment Spring 1967	Male		Female	
	Number Employed	Percent	Number Employed	Percent
525	23	4.4	502	95.6
374	54	19.3	302	80.7
1,089	163	15.0	926	85.0
8,044	0	0	8,044	100.0
4,204	29	0.7	4,175	99.3
700	0	0	700	100.0
8,415	27	0.3	8,388	99.7
44	6	13.6	38	86.4
55	18	32.7	37	64.0
2,283	2,283	100.0	0	0
9	7	77.8	2	22.2
149	110	73.8	39	26.2
118	29	24.6	89	75.4
141	34	24.1	107	75.9
103	25	24.3	78	75.7
1,321	1,321	100.0	0	0
2,545	1,335	52.5	1,210	47.5
759	138	18.2	621	81.8
87	39	44.8	48	55.2
269	264	98.1	5	1.9
32	31	96.9	1	3.1
376	59	15.7	317	84.3
949	11	1.2	938	99.8
1,864	0	0	1,864	100 0

TABLE V: TEN OCCUPATIONS WITH THE HIGHEST NUMBER OF CURRENT JOB VACANCIES

Rank	Occupation	Total Number Job Vacancies Spring 1967
1	Nurse, Registered	863
2	Nurse, Licensed, Practical	475
3	Dental Hygienist	253
4	Nurse Aid	245
5	Orderly	168
6	Porter	104
7	Medical Technologist	90
8	Dental Assistant	60
9	Nurse, Public Health	45
10	Dental Laboratory Technician	44

CHART C: TEN OCCUPATIONS ANTICIPATING THE LARGEST NUMERICAL GAINS WITH PERCENTAGE CHANGE 1967 - 1970 and 1967 - 1973



Occupation	Total Numerical Gains By 1970	By 1973
Dental Hygienist	340	410
Medical Office Assistant	380	550
Medical Technologist	300	450
Nurse Aid	1,300	1,960
Nurse, Licensed, Practical	1,340	1,950
Nurse, Registered	1,970	2,900
Orderly	550	760
Porter	310	470
Ward Clerk	270	430
Ward Maid	340	600

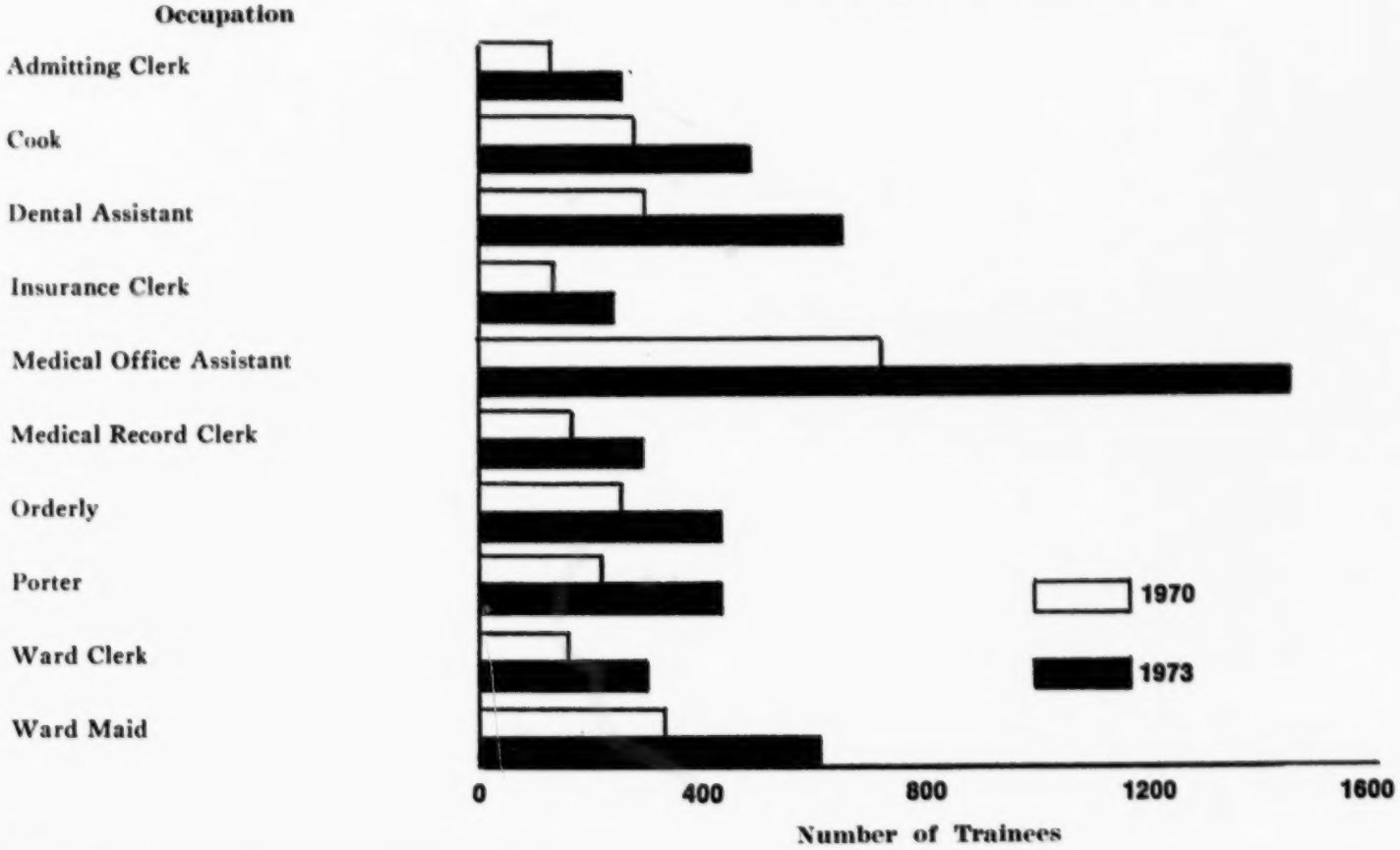
EMPLOYMENT SECURITY COMMISSION OF NORTH CAROLINA

TABLE VI: PROJECTED TRAINED SUPPLY FROM SCHOOLS AND ON-THE-JOB TRAINING FOR TEN SELECTED OCCUPATIONS BY SPRING, 1970 AND 1973

RANK	OCCUPATION	Number Completing On-the-Job Training By		Number Completing School By		Newly Trained Workers Available By	
		1970	1973	1970	1973	1970	1973
1	Nurse, Registered	0	0	3,230	6,350	3,230	6,350
2	Nurse, Licensed, Practical	0	0	2,115	3,740	2,115	3,740
3	Nurse Aid	515	750	1,520	2,250	2,035	3,000
4	Radiologic Technologist	65	85	430	795	495	880
5	Dental Assistant	305	390	190	375	495	765
6	Orderly	235	370	225	320	460	690
7	Medical Technologist	0	0	325	625	325	625
8	Dental Hygienist	5	5	285	520	290	525
9	Psychiatric Aid	15	20	225	425	240	445
10	Medical Office Assistant	210	260	50	70	260	330

CHART D: TEN OCCUPATIONS FOR WHICH THE GREATEST TRAINING NEED IS INDICATED

1967-1970 AND 1967-1973



Occupation	Net Trainees Needed By 1970	By 1973
Admitting Clerk	140	260
Cook	280	500
Dental Assistant	300	600
Insurance Clerk	140	240
Medical Office Assistant	720	1,440
Medical Record Clerk	180	300
Orderly	260	440
Porter	220	440
Ward Clerk	160	310
Ward Maid	330	610

CHART E: DISTRIBUTION OF ANTICIPATED TRAINING FOR SURVEYED HEALTH SERVICE OCCUPATIONS BY TYPE OF TRAINING FACILITY—SPRING 1970 AND 1973

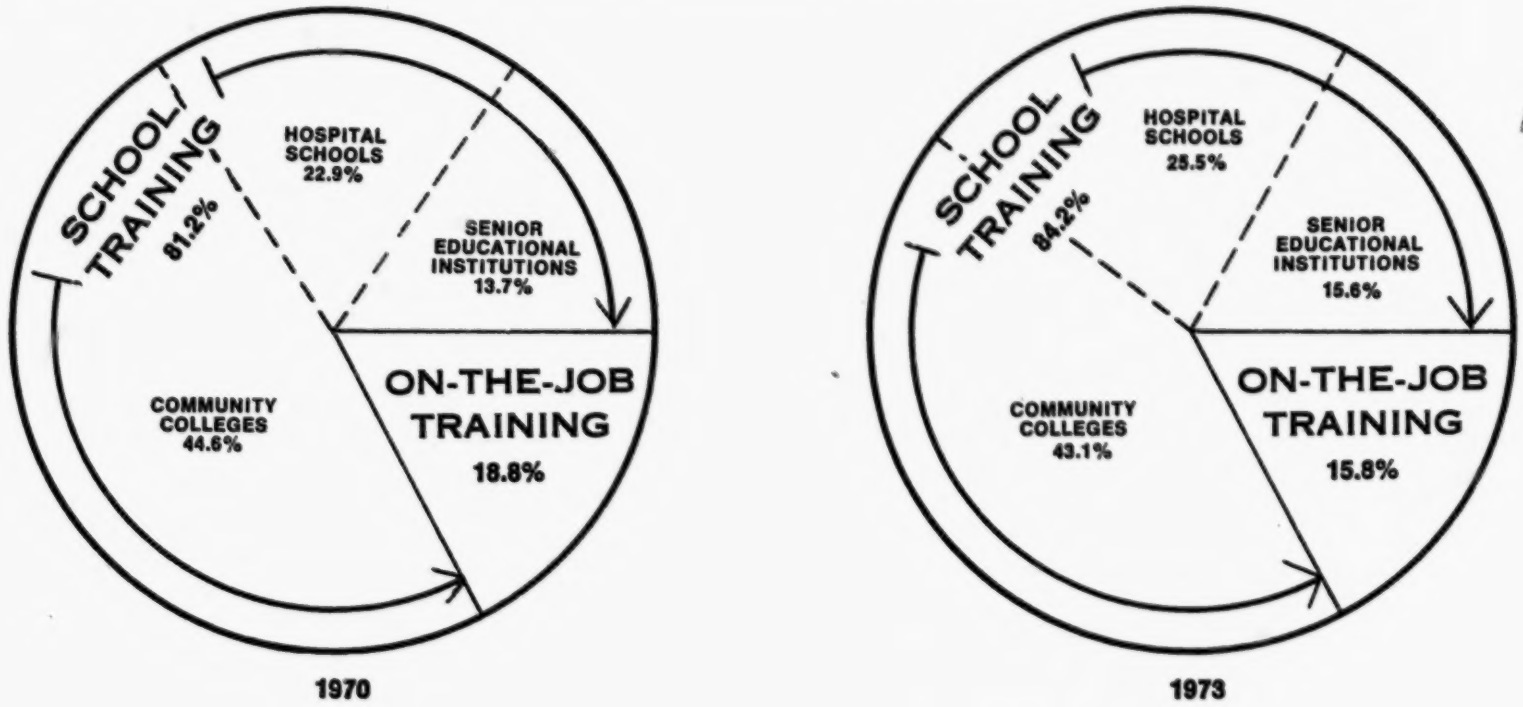
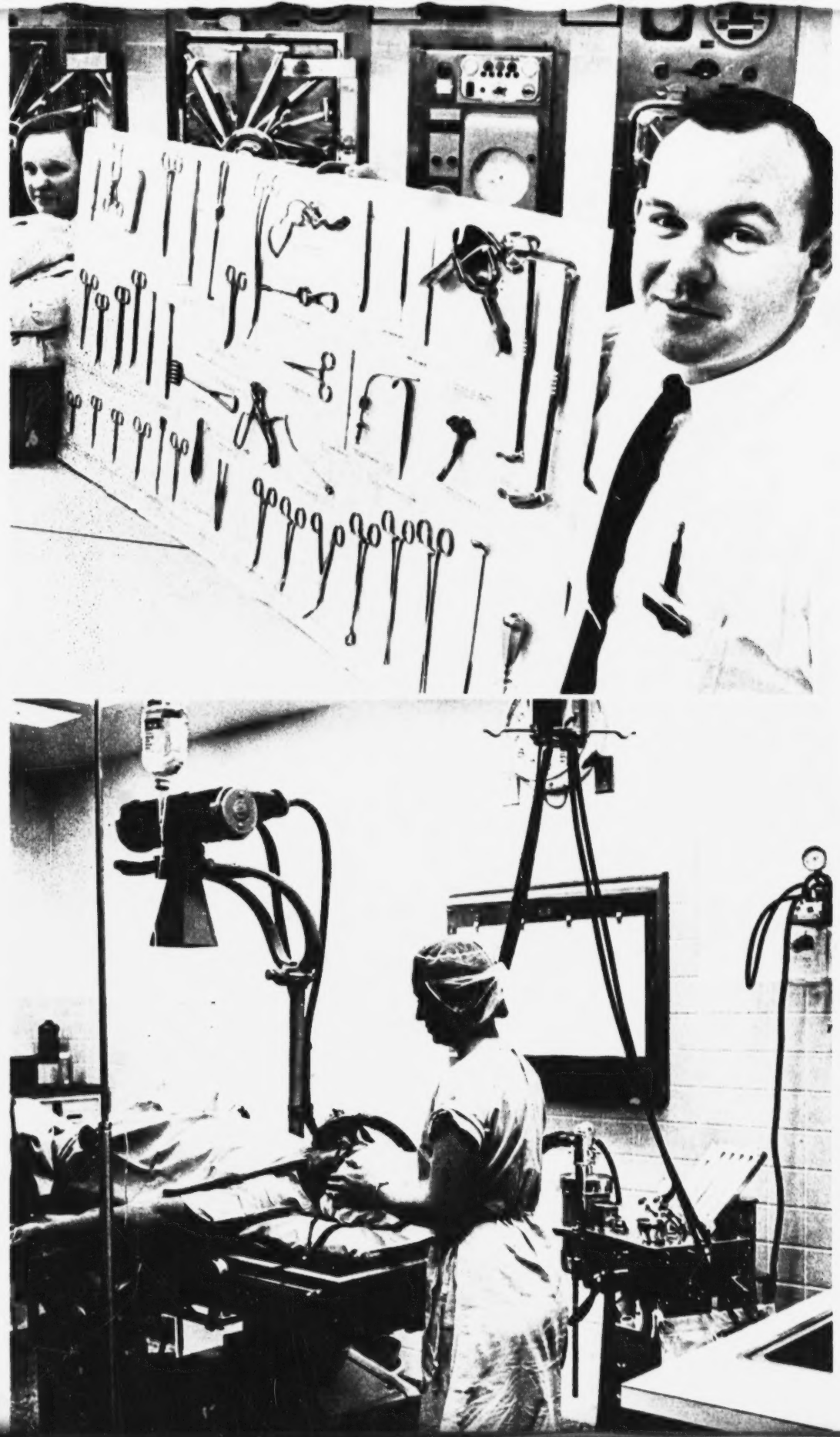


TABLE VII: TRAINEE OUTPUT IN MEDICAL AND HEALTH SERVICE OCCUPATIONS—DEPARTMENT OF COMMUNITY COLLEGES BY SPRING, 1970 AND 1973

Occupation	Number in Training Spring 1967 Total	Number in Training Spring 1967 Female	Number Completing Training By Spring 1970	Number Completing Training By Spring 1973
Total All Occupations	1,615	1,515	5,290	8,970
Dental Assistant	55	55	190	375
Dental Hygienist	110	110	285	520
Dental Laboratory Technician	35	0	55	110
Home Health Aid	25	25	120	200
Medical Laboratory Assistant	55	50	180	360
Medical Office Assistant	0	0	50	70
Nurse Aid	475	475	1,520	2,250
Nurse, Licensed, Practical	615	610	2,015	3,465
Nurse, Registered	180	180	480	1,030
Orderly	55	0	225	320
Psychiatric Aid	10	10	75	125
Ward Clerk	0	0	95	145



PART IV

Area Survey Findings

AREAS DESIGNATED FOR DISTRIBUTION OF STATEWIDE SURVEY FINDINGS
LOCATIONS OF TRAINING INSTITUTIONS AND
NORTH CAROLINA EMPLOYMENT SECURITY COMMISSION OFFICES

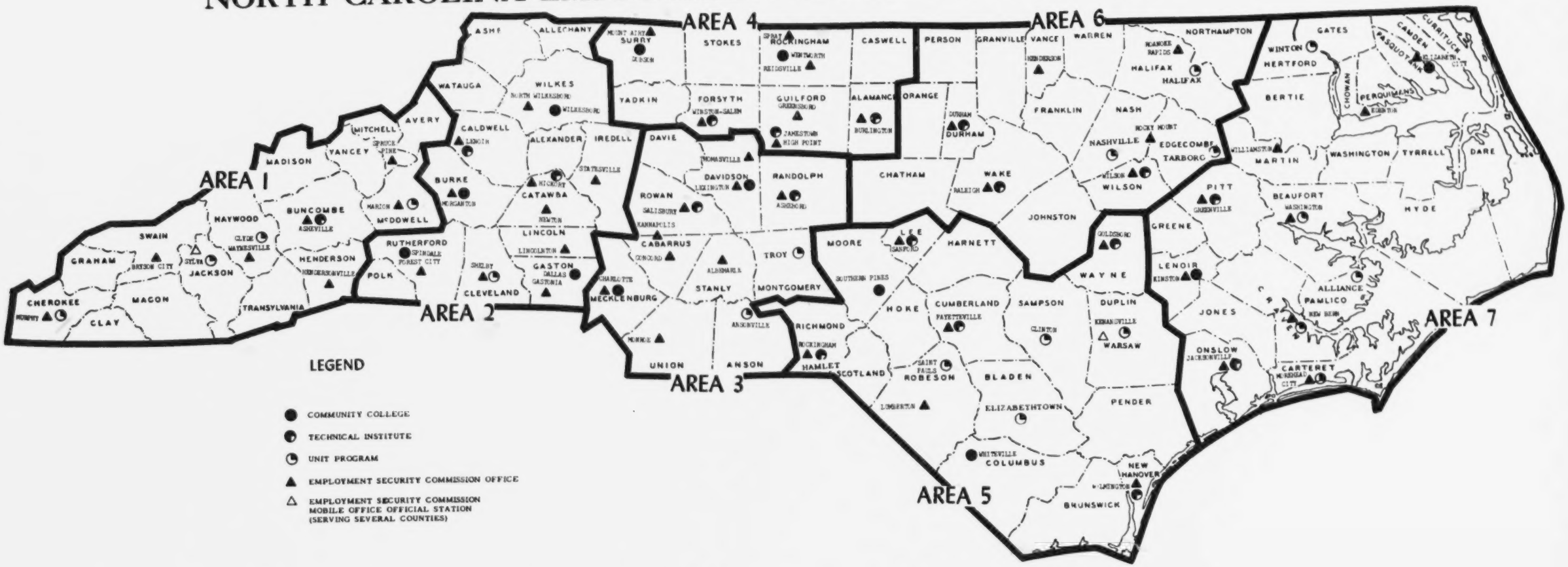
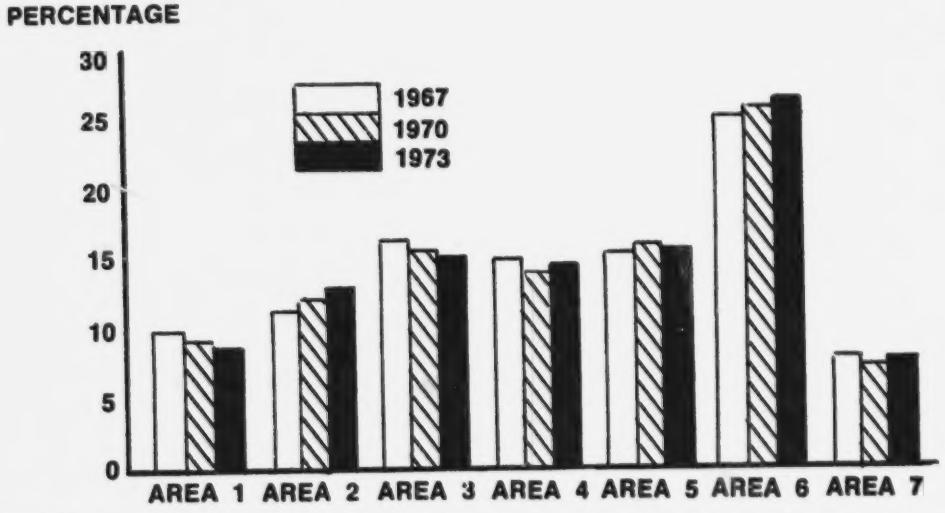


CHART F: CURRENT AND ANTICIPATED DISTRIBUTION OF TOTAL MEDICAL AND HEALTH SERVICE EMPLOYMENT BY AREA



EMPLOYMENT SECURITY COMMISSION OF NORTH CAROLINA

TABLE VIII: DISTRIBUTION OF MEDICAL AND HEALTH SERVICE EMPLOYMENT BY AREA

	Spring - 1967		By Spring - 1970		By Spring - 1973	
Area	Employment	Percent	Employment	Percent	Employment	Percent
Statewide	66,090	100.0	78,230	100.0	85,480	100.0
Area 1	6,155	9.3	7,095	9.1	7,670	9.0
" 2	7,710	11.7	9,385	12.0	10,590	12.4
" 3	10,640	16.1	12,530	16.0	13,115	15.3
" 4	9,860	14.9	11,510	14.7	12,660	14.8
" 5	10,150	15.3	12,235	15.7	13,265	15.5
" 6	16,585	25.1	19,740	25.2	21,800	25.5
" 7	5,010	7.6	5,735	7.3	6,380	7.5

NORTH CAROLINA AREA SURVEY FINDINGS

INTRODUCTION

Survey findings have been compiled for seven designated areas of the State. These areas are shown by the map on the preceding page. Area findings presented on the following pages provide information relative to the concentration of employment and training needs.

These data show total employment by area during the spring of 1967, and anticipated employment by the spring of 1973, for selected occupations. Also presented are trained worker demands due to expansion and replacement; trained workers available from on-the-job training and schools; and net training needs by the spring of 1973.

Actual school output for some occupations in a given area may not be too meaningful because graduates may seek and find employment in other areas where job opportunities exist, rather than in the locality where training was offered.

The table on the preceding page shows the percent distribution of surveyed employment during the spring of 1967, and the distribution of such employment for the two forecast periods. The following three tables show: (1) employment in surveyed establishments during the spring of 1967, and anticipated increases by the spring of 1970 and 1973; (2) comparison of employment in selected counties to total employment within the area; (3) distribution of beds in health service facilities during the spring of 1967, and planned additions by the spring of 1973.

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TABLE IX: EMPLOYMENT IN SURVEYED ESTABLISHMENTS DURING THE SPRING OF 1967 *and* ANTICIPATED EMPLOYMENT BY THE SPRING OF 1970 AND 1973 *with* NUMERICAL AND PERCENTAGE CHANGE, BY AREA

Area	Employment Spring 1967	Anticipated by Spring—1970			Anticipated by Spring—1973		
		Employment	Change From 1967 Numerical	Percent	Employment	Change From 1967 Numerical	Percent
Statewide	66,090	78,230	12,140	18.4	85,480	19,390	29 3
Area 1	6,135	7,095	960	15.6	7,670	1,535	25.0
" 2	7,710	9,385	1,675	21.7	10,590	2,880	37.4
" 3	10,640	12,530	1,890	17 8	13,115	2,475	23.3
" 4	9,860	11,510	1,650	16.7	12,660	2,800	28.4
" 5	10,150	12,235	2,085	20.5	13,265	3,115	30 7
" 6	16,585	19,740	3,155	19.0	21,800	5,215	31.4
" 7	5,010	5,735	725	14.5	6,380	1,370	27.3

EMPLOYMENT SECURITY COMMISSION OF NORTH CAROLINA

TABLE X: RELATIONSHIP OF EMPLOYMENT IN SELECTED COUNTY OR COUNTIES TO AREA HEALTH SERVICE EMPLOYMENT—SPRING, 1967

Region	Health Service Employment Spring, 1967	Selected Counties	Employment Selected Counties	Percent of Area Employment
Statewide	66,090	Total—Seventeen Counties	41,035	62.1
Area 1	6,135	Buncombe	3,740	61.0
" 2	7,710	Burke, Gaston, Iredell	4,165	54.0
" 3	10,640	Mecklenburg	5,910	55.5
" 4	9,860	Forsyth, Guilford	7,650	77.6
" 5	10,150	Cumberland, New Hanover, Wayne	5,730	56.5
" 6	16,585	Durham, Orange, Wake	10,830	65 3
" 7	5,010	Craven, Lenoir, Onslow, Pitt	3,010	60.1

TABLE XI: DISTRIBUTION OF BEDS IN SURVEYED HEALTH SERVICE FACILITIES DURING THE SPRING—1967 AND PLANNED ADDITIONS BY THE SPRING—1973

AREA	HOSPITALS			NURSING HOMES			REST HOMES		
	Planned Bed Accommodations Spring—1967	Number Being Utilized Spring—1967	To Be Added By Spring—1973	Planned Bed Accommodations Spring—1967	Number Being Utilized Spring—1967	To Be Added By Spring—1973	Planned Bed Accommodations Spring—1967	Number Being Utilized Spring—1967	To Be Added By Spring—1973
Statewide	41,555	38,165	5,850	6,475	5,850	910	5,850	5,735	570
Area 1	3,095	2,675	255	285	275	50	810	780	55
" 2	5,630	5,290	1,505	415	410	35	980	970	210
" 3	5,310	4,220	595	1,540	1,330	235	865	850	0
" 4	3,345	3,045	745	1,720	1,640	260	595	590	70
" 5	8,685	7,645	825	1,265	1,145	190	870	830	115
" 6	11,160	11,340	1,435	945	750	100	1,300	1,290	110
" 7	4,330	3,950	490	305	300	40	430	425	10

INDEX OF OCCUPATIONS STUDIED WITH AREA FINDINGS

OCCUPATIONAL TITLE	*Page*
Adminstrator Administrative Assistant	22
Admitting Officer Admitting Clerk	23
Pharmacist Pharmacy Helper	24
Nurse, Registered Nurse, Public Health	25
Nurse, Licensed, Practical Nurse Aid	26
Orderly Psychiatric Aid	27
Dental Hygienist Dental Assistant	28
Dental Laboratory Technician Medical Laboratory Assistant	29
Sanitarian Sanitarian Aid	30
Homemaker Home Health Aid	31
Cottage Parent Child Care Attendant	32
Inhalation Therapist Recreational Therapist	33
Occupational Therapist Occupational Therapy Aid	34
Physical Therapist Physical Therapy Aid	35
Medical Librarian Medical Record Librarian	36
Medical Record Clerk Medical Supply Clerk	37
Insurance Clerk Medical Office Assistant	38
Medical Technologist Cytotechnologist	39
Electrocardiograph Technician Electroencephalograph Technician	40
Radiologic Technician Orthopedic-Cast Specialist	41
Dietitian Cook	42
Director Volunteer Services Housekeeper	43
Ward Maid Porter	44
Surgical Technician Ward Clerk	45

AREA SURVEY FINDINGS, BY OCCUPATION

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment		Total Worker Demand			Trained Worker Supply				Net Training Needs
	Spring 1967	Anticipated 1973	Expansion	Replacement	Total	On-the-Job	School	Unemployed	Total	
ADMINISTRATOR										
Statewide	510	531	21	72	93	0	107	0	107	— 14
Area 1	66	67	1	6	7	0	0	0	0	7
" 2	78	86	8	6	14	0	0	0	0	14
" 3	67	67	0	0	0	0	0	0	0	0
" 4	60	62	2	6	8	0	0	0	0	8
" 5	92	96	4	30	34	0	0	0	0	34
" 6	104	110	6	18	24	0	107	0	107	— 83
" 7	43	43	0	6	6	0	0	0	0	6
ADMINISTRATIVE ASSISTANT										
Statewide	264	357	93	36	129	3	0	3	6	123
Area 1	23	30	7	0	7	0	0	0	0	7
" 2	34	53	19	0	19	0	0	0	0	19
" 3	36	46	10	6	16	0	0	2	2	14
" 4	34	48	14	12	26	0	0	1	1	25
" 5	39	50	11	6	17	0	0	0	0	17
" 6	75	100	25	6	31	3	0	0	3	28
" 7	23	30	7	6	13	0	0	0	0	13

ADMINISTRATOR

In the Spring of 1967, there were 510 administrators employed in three different types of medical and health service establishments in North Carolina. Of this total, 37 percent were employed in hospitals; 20 percent in nursing homes; and the remaining 43 percent were working in rest homes.

Our survey data show there will be more personnel trained by 1973, than there are job opportunities. However, one must view this finding with caution, as a large number of these graduates will leave the State upon graduating.

Duke University is the only school in the State which offers a hospital administration program.

ADMINISTRATIVE ASSISTANT

There are roughly 265 administrative assistants employed in the health service industry throughout the State; and, of these, 52 percent are female. Nearly 60 percent of these assistants are working in hospitals.

An employment growth rate of 35 percent is indicated for this occupation, over the next six years.

A potential training need of almost 125 may exist by the spring of 1973, as practically no formal training is being offered in this occupation, either in school or on-the-job.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
ADMITTING OFFICER										
Statewide	87	101	14	6	20	0	0	0	0	20
Area 1	8	9	1	6	7	0	0	0	0	7
" 2	13	17	4	0	4	0	0	0	0	4
" 3	14	16	2	0	2	0	0	0	0	2
" 4	11	13	2	0	2	0	0	0	0	2
" 5	17	18	1	0	1	0	0	0	0	1
" 6	17	19	2	0	2	0	0	0	0	2
" 7	7	9	2	0	2	0	0	0	0	2
ADMITTING CLERK										
Statewide	414	587	173	114	287	23	0	7	30	257
Area 1	39	61	22	6	28	1	0	1	2	26
" 2	38	70	32	0	32	4	0	1	5	27
" 3	66	83	17	30	47	1	0	0	1	46
" 4	66	82	16	0	16	6	0	0	6	10
" 5	64	78	14	24	38	1	0	1	2	36
" 6	111	172	61	30	91	5	0	0	5	86
" 7	30	41	11	24	35	5	0	4	9	26

ADMITTING OFFICER

Survey results show that almost all of the admitting officers were working in hospitals and that women constituted 80 percent of these jobholders.

The above table reveals no formal training programs are planned for this occupation.

ADMITTING CLERK

The State's hospitals use the major portion of the nearly 415 admitting clerks employed in the health facilities included in the 1967 survey. These jobs were filled almost entirely by women.

The number of employees needed to carry out the increasing duties of this job is expected to rise sharply by 1973. Almost six percent of the number anticipated for expansions were needed to fill jobs that were vacant at survey time.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
PHARMACIST										
Statewide	149	218	69	48	117	0	670	0	670	− 553
Area 1	19	30	11	12	23	0	0	0	0	23
" 2	18	30	12	6	18	0	0	0	0	18
" 3	26	30	4	6	10	0	0	0	0	10
" 4	29	38	9	6	15	0	0	0	0	15
" 5	14	24	10	6	16	0	0	0	0	16
" 6	35	52	17	6	23	0	670	0	670	− 647
" 7	8	14	6	6	12	0	0	0	0	12
PHARMACY HELPER										
Statewide	118	182	64	24	88	18	0	1	19	69
Area 1	13	21	8	0	8	0	0	0	0	8
" 2	16	30	14	6	20	2	0	0	2	18
" 3	20	24	4	0	4	0	0	0	0	4
" 4	16	25	9	0	9	8	0	0	8	1
" 5	16	30	14	6	20	5	0	1	6	14
" 6	29	39	10	12	22	3	0	0	3	19
" 7	8	13	5	0	5	0	0	0	0	5

PHARMACIST

Of some 1,800 pharmacists employed in North Carolina, the 150 surveyed worked in hospitals. Women account for slightly more than one-fourth of the total hospital employment in this field. At survey time there were 15 vacancies for hospital pharmacists.

In the spring of 1967, some hospitals did not employ a pharmacist, some employed one on a part-time basis, and some had vacancies for this job. By 1973, the administrators in most hospitals anticipate adding at lease one pharmacist on a full-time basis. Expansion needs will result in an upswing of almost 47 percent over the number of pharmacists employed at survey time.

The University of North Carolina at Chapel Hill is the only school in the State which offers a degree in pharmacy. Retail establishments needs were not included in the above data. If the demand for hospital pharmacists is indicative of the need for pharmacists in retail establishments, which employ the greatest number of pharmacists, graduates should obtain employment in North Carolina without difficulty.

PHARMACY HELPER

The survey results revealed that the demand for hospital pharmacy helpers will increase steadily over the next several years. In the spring of 1967, there were nearly 120 employed and by 1973, an additional need of 65 is expected. Slightly more than three-fourths of these employees were women.

Hospital administrators expect that most of the employees added by 1973, will be needed for present and future expansion. Of the worker demands, eight percent were needed immediately to fill positions which were vacant at survey time.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
REGISTERED NURSE										
Statewide	8,415	11,312	2,897	1,596	4,493	0	6,349	6	6,355	− 1,862
Area 1	680	965	285	378	663	0	284	0	284	379
" 2	961	1,356	395	186	581	0	690	2	692	− 111
" 3	1,639	1,964	325	222	547	0	1,384	1	1,385	− 838
" 4	1,443	1,879	436	120	556	0	1,395	0	1,395	− 839
" 5	1,391	1,899	508	378	886	0	684	1	685	201
" 6	1,749	2,492	743	222	965	0	1,605	1	1,606	− 641
" 7	552	757	205	90	295	0	307	1	308	− 13
PUBLIC HEALTH NURSE										
Statewide	700	980	280	174	454	0	0	0	0	454
Area 1	47	63	16	18	34	0	0	0	0	34
" 2	71	117	46	18	64	0	0	0	0	64
" 3	122	147	25	24	49	0	0	0	0	49
" 4	128	177	49	12	61	0	0	0	0	61
" 5	110	172	62	60	122	0	0	0	0	122
" 6	143	187	44	24	68	0	0	0	0	68
" 7	79	117	38	18	56	0	0	0	0	56

REGISTERED NURSE

Eight hundred and sixty-three job openings were reported in this occupation, at survey time. During the spring of 1967, staff nurses were reported to be working as follows: 6,920 in hospitals; 1,210 in doctors' offices; 270 in nursing homes, and 15 in rest homes.

Additional worker requirements by 1973 are estimated to be 4,495, and total turnover needs are expected to be 10,250.

Sampled facilities forecast, if programs can be filled, nearly 6,350 students will graduate from schools during the next six years. We have not attempted to estimate the number who will not pass the State Board Examination; those who will not go into nursing; those who go into out-of-State employment; but, we have included all graduates in the measure of supply.

PUBLIC HEALTH NURSE

During the spring of 1967, all of the surveyed employment in this occupation was female and working in local health departments.

There were 45 vacancies in this occupation at survey time.

Net training needs will be approximately 455 in the spring of 1973. Some of the registered nurses who receive baccalaureate degrees, however, will choose this field since the curriculum included public health service training, thereby somewhat offsetting part of the anticipated shortage.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
NURSE, LICENSED, PRACTICAL										
Statewide	4,204	6,159	1,955	882	2,837	0	3,741	8	3,749	– 912
Area 1	447	700	253	102	355	0	363	1	364	– 9
" 2	554	818	264	156	420	0	488	4	492	– 72
" 3	572	900	328	114	442	0	364	0	364	78
" 4	608	865	257	174	431	0	436	0	436	– 5
" 5	643	1,040	397	180	577	0	796	2	798	– 221
" 6	994	1,303	309	108	417	0	839	0	839	– 422
" 7	386	533	147	48	195	0	455	1	456	– 261
NURSE AID										
Statewide	8,044	10,005	1,961	1,128	3,089	751	2,247	124	3,122	– 33
Area 1	865	1,040	175	114	289	166	188	19	373	– 84
" 2	1,051	1,395	344	192	536	29	244	36	309	227
" 3	1,453	1,762	309	90	399	86	0	6	92	307
" 4	1,350	1,689	339	174	513	242	0	19	261	252
" 5	1,317	1,685	368	234	602	117	1,185	18	1,320	– 718
" 6	1,343	1,654	311	246	557	93	253	17	363	194
" 7	665	780	115	78	193	18	377	9	404	– 211

NURSE, LICENSED, PRACTICAL

During the spring of 1967, there were 3,040 practical nurses working in hospitals; 750 in doctors' offices; 325 in nursing homes, 80 in rest homes, and a few in health departments.

There were 475 vacancies reported in this occupation at survey time, indicating severe immediate needs. This occupation is expected to be exceeded in numerical growth only by nurse, registered and nurse aid during the projection period of this survey. By 1973, turnover needs are expected to be 3,980 in surveyed establishments.

While the compiled data suggests overtraining, the data on turnover indicate that job vacancies are likely to persist.

NURSE AID

In the spring of 1967, the State's medical facilities employed slightly over eight thousand nurse aids. Of the total, 69 percent were working in hospitals, 18 per cent in nursing homes, and 13 percent in rest homes. At survey time, employers in these facilities anticipated by 1973, they would need almost two thousand additional nurse aids for expansion of services and facilities. Of this number, over 12 percent were urgently needed to fill vacancies that existed at survey time.

Slightly more than 2,500 nurse aids were hired for replacement or turnover needs during the past year. This experience is expected to continue at about the same level during the next six-year period.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
ORDERLY										
Statewide	2,283	3,044	761	396	1,157	371	320	23	714	443
Area 1	310	359	49	42	91	25	68	2	95	– 4
" 2	212	325	113	66	179	15	123	9	147	32
" 3	340	472	132	42	174	124	0	3	127	47
" 4	285	376	91	24	115	99	0	5	104	11
" 5	400	536	136	36	172	35	89	3	127	45
" 6	588	787	199	168	367	66	0	0	66	301
" 7	148	189	41	18	59	7	40	1	48	11
PSYCHIATRIC AID										
Statewide	2,545	2,633	88	336	424	19	424	6	449	– 25
Area 1	99	99	0	0	0	0	0	0	0	0
" 2	518	528	10	6	16	0	0	3	3	13
" 3	348	349	1	78	79	0	0	1	1	78
" 4	11	12	1	0	1	1	0	0	1	0
" 5	649	649	0	36	36	0	124	0	124	– 88
" 6	920	984	64	216	280	18	300	1	319	– 39
" 7	0	12	12	0	12	0	0	1	1	11

ORDERLY

In the spring of 1967, there were 2,300 orderlies employed by the three types of health facilities in the State. This type of worker was employed principally in the hospitals; however, around 350 were working in nursing homes and rest homes at survey time.

Administrators anticipate the number employed in the spring of 1967, will have to be increased by one-third if the worker demand by 1973 is met. At survey time, there were 170 vacancies in this occupation.

PSYCHIATRIC AID

During the spring of 1967, there were 2,545 psychiatric aids working in hospitals and, of these, nearly one-half were female.

The expansion needs in this occupation are expected to amount to nearly 90 by spring, 1973; however, turnover needs may total 2,450 during the same period.

Only two areas in the State have school facilities for training psychiatric aids. These schools are expected to provide an adequate supply of trained workers for hospital needs by spring, 1970 and 1973.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
DENTAL ASSISTANT										
Statewide	1,796	2,095	299	1,140	1,439	391	376	12	779	660
Area 1	177	188	11	66	77	29	0	4	33	44
" 2	253	306	53	156	209	79	0	2	81	128
" 3	318	399	81	246	327	81	164	0	245	82
" 4	362	430	68	168	236	79	152	2	233	3
" 5	194	250	56	72	128	69	60	1	130	— 2
" 6	319	349	30	252	282	48	0	1	49	233
" 7	173	173	0	180	180	6	0	2	8	172
DENTAL HYGIENIST										
Statewide	153	563	410	180	590	6	520	0	526	64
Area 1	24	55	31	0	31	0	0	0	0	31
" 2	16	77	61	0	61	0	0	0	0	61
" 3	34	108	74	0	74	0	210	0	210	— 136
" 4	28	117	89	0	89	6	150	0	156	— 67
" 5	7	63	56	72	128	0	160	0	160	— 32
" 6	31	103	72	72	144	0	0	0	0	144
" 7	13	40	27	36	63	0	0	0	0	63

DENTAL ASSISTANT

Dentists employed around 1,800 dental assistants during the spring of 1967.

Expansion needs for this occupation are expected to amount to 240 by 1970. Currently, there are 60 jobs available.

DENTAL HYGIENIST

Surveyed establishments anticipate employment in this occupation will soar from roughly 150 in 1967 to 565 in 1973, an increase of 268 percent.

At survey time, employers indicated immediate needs for 255 trained dental hygienists.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand: Expansion	Total Worker Demand: Replacement	Total Worker Demand: Total	Trained Worker Supply: On-the-Job	Trained Worker Supply: School	Trained Worker Supply: Unemployed	Trained Worker Supply: Total	Net Training Needs
DENTAL LABORATORY TECHNICIAN										
Statewide	206	403	197	108	305	49	108	0	157	148
Area 1	33	43	10	0	10	10	0	0	10	0
" 2	15	43	28	0	28	2	0	0	2	26
" 3	63	86	23	0	23	16	0	0	16	7
" 4	34	82	48	12	60	5	0	0	5	55
" 5	0	12	12	0	12	0	0	0	0	12
" 6	37	91	54	12	66	7	108	0	115	− 49
" 7	24	46	22	84	106	9	0	0	9	97
MEDICAL LABORATORY ASSISTANT										
Statewide	453	676	223	54	277	77	384	1	462	− 185
Area 1	75	96	21	12	33	48	80	0	128	− 95
" 2	47	75	28	6	34	3	24	1	28	6
" 3	49	75	26	0	26	4	0	0	4	22
" 4	36	52	16	0	16	10	0	0	10	6
" 5	72	96	24	12	36	7	0	0	7	29
" 6	159	250	91	18	109	3	280	0	283	− 174
" 7	15	32	17	6	23	2	0	0	2	21

DENTAL LABORATORY TECHNICIAN

During the spring of 1967, there were 160 dental laboratory technicians employed in dental laboratories and 45 were working in dentists' offices and, of these, 74 percent were male.

There is only one school in the State which provides a course in dental laboratory technology.

At survey time, employers revealed an immediate need for 45 technicians.

MEDICAL LABORATORY ASSISTANT

In the spring of 1967, a large majority of the medical laboratory assistants were employed in hospitals and over seventy-five percent were women.

Survey data indicate the supply of trained personnel could be adequate to fill available job opportunities by 1973, if most of the trained workers can be induced to remain in medical laboratory work.

There were 25 vacancies in this occupation at survey time.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment		Total Worker Demand			Trained Worker Supply				Net Training Needs
	Spring 1967	Anticipated 1973	Expansion	Replacement	Total	On-the-Job	School	Unemployed	Total	
SANITARIAN										
Statewide	269	367	98	90	188	0	0	4	4	184
Area 1	27	30	3	18	21	0	0	0	0	21
" 2	35	47	12	6	18	0	0	4	4	14
" 3	52	59	7	6	13	0	0	0	0	13
" 4	43	55	12	18	30	0	0	0	0	30
" 5	39	67	28	18	46	0	0	0	0	46
" 6	42	61	19	12	31	0	0	0	0	31
" 7	31	48	17	12	29	0	0	0	0	29
SANITARIAN AID										
Statewide	32	94	62	12	74	13	0	0	13	61
Area 1	2	11	9	0	9	0	0	0	0	9
" 2	6	13	7	0	7	2	0	0	2	5
" 3	6	13	7	0	7	0	0	0	0	7
" 4	3	9	6	0	6	1	0	0	1	5
" 5	7	24	17	12	29	7	0	0	7	22
" 6	5	12	7	0	7	3	0	0	3	4
" 7	3	12	9	0	9	0	0	0	0	9

SANITARIAN

Health departments employed approximately 270 sanitarians during the spring of 1967.

Expansion needs in this occupation are expected to total 100 by 1973, a 36 percent employment increase.

At survey time, health departments indicated an immediate need for 10 qualified workers in this occupation.

Survey findings reveal that an additional 185 trained sanitarians will be required by 1973. No formal training programs are offered in this State.

SANITARIAN AID

During the spring of 1967, there were over 30 sanitarian aids employed by local health departments.

Total employment in this occupation is expected to nearly treble during the next six years.

On-the-job training programs are expected to supply only 18 percent of the estimated trained worker requirements by 1973.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
HOMEMAKER										
Statewide	107	339	232	30	262	175	0	0	175	87
Area 1	2	25	23	0	23	6	0	0	6	17
" 2	10	33	23	0	23	12	0	0	12	11
" 3	23	81	58	18	76	93	0	0	93	— 17
" 4	25	39	14	0	14	10	0	0	10	4
" 5	26	56	30	0	30	17	0	0	17	13
" 6	10	53	43	12	55	19	0	0	19	36
" 7	11	52	41	0	41	18	0	0	18	23
HOME HEALTH AID										
Statewide	14	168	154	0	154	39	198	1	238	— 84
Area 1	0	3	3	0	3	0	0	0	0	3
" 2	5	25	20	0	20	6	0	0	6	14
" 3	1	9	8	0	8	1	0	1	2	6
" 4	7	36	29	0	29	8	102	0	110	— 81
" 5	0	29	29	0	229	4	96	0	100	— 71
" 6	0	41	41	0	41	18	0	0	18	23
" 7	1	25	24	0	24	2	0	0	2	22

HOMEMAKER

At survey time, welfare departments employed over 105 homemakers, mainly female.

There were 15 jobs available for workers in this occupation at the time of this survey.

HOME HEALTH AID

During the survey period, home health aids were employed by health departments in four areas of North Carolina. All persons employed in this occupation were female.

Employment in this occupation is expected to soar, as expansion needs are projected to exceed 150 by 1973.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment		Total Worker Demand			Trained Worker Supply				Net Training Needs
	Spring 1967	Anticipated 1973	Expansion	Replacement	Total	On-the-Job	School	Unemployed	Total	
COTTAGE PARENT										
Statewide	1,304	1,482	178	138	316	124	0	0	124	192
Area 1	0	0	0	0	0	0	0	0	0	0
" 2	95	199	104	12	116	104	0	0	104	12
" 3	0	0	0	0	0	0	0	0	0	0
" 4	0	0	0	0	0	0	0	0	0	0
" 5	321	362	41	54	95	0	0	0	0	95
" 6	453	466	13	12	25	0	0	0	0	25
" 7	435	455	20	60	80	20	0	0	20	60
CHILD CARE ATTENDANT										
Statewide	82	173	91	0	91	89	0	4	93	— 2
Area 1	3	4	1	0	1	0	0	0	0	1
" 2	73	158	85	0	85	85	0	0	85	0
" 3	6	10	4	0	4	4	0	1	5	— 1
" 4	0	1	1	0	1	0	0	3	3	— 2
" 5	0	0	0	0	0	0	0	0	0	0
" 6	0	0	0	0	0	0	0	0	0	0
" 7	0	0	0	0	0	0	0	0	0	0

COTTAGE PARENT

During the survey period, over 1,300 cottage parents were working in State hospitals. This total also includes some ward attendants, since several of the surveyed establishments do not differentiate between cottage parents and attendants.

Turnover needs in this occupation are expected to exceed both expansion and replacement needs over the next six years.

As shown in the above table, on-the-job training programs are expected to supply roughly 40 percent of the workers needed to fulfill employer demands.

CHILD CARE ATTENDANT

Child care attendants were employed only by surveyed hospitals, largely public. Presently there are some 80 working in three areas of North Carolina.

Surveyed employers forecast a substantial increase in the number of employees needed.

Employers expect to train enough personnel to meet their anticipated needs for this occupation through on-the-job training programs.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
INHALATION THERAPIST										
Statewide	57	163	106	7	113	14	74	0	88	25
Area 1	6	14	8	0	8	3	0	0	3	5
" 2	3	15	12	0	12	0	0	0	0	12
" 3	7	23	16	0	16	0	0	0	0	16
" 4	18	45	27	1	28	3	74	0	77	— 49
" 5	6	15	9	0	9	0	0	0	0	9
" 6	17	45	28	6	34	8	0	0	8	26
" 7	0	6	6	0	6	0	0	0	0	6
RECREATIONAL THERAPIST										
Statewide	87	136	49	18	67	0	0	0	0	67
Area 1	5	6	1	0	1	0	0	0	0	1
" 2	10	21	11	0	11	0	0	0	0	11
" 3	13	16	3	6	9	0	0	0	0	9
" 4	4	12	8	0	8	0	0	0	0	8
" 5	23	32	9	0	9	0	0	0	0	9
" 6	25	41	16	6	22	0	0	0	0	22
" 7	7	8	1	6	7	0	0	0	0	7

INHALATION THERAPIST

All surveyed inhalation therapists worked in hospitals and one-third of them were women.

The number of inhalation therapists is expected to nearly treble by 1973.

Some 20 vacancies were reported in this occupation at survey time.

RECREATIONAL THERAPIST

During the survey period, hospitals and nursing homes employed approximately 85 recreational therapists and more than half were female.

An increase in employment of 58 percent is projected for this occupation by 1973.

Administrators reported 15 vacancies existed in this occupation at survey time.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
OCCUPATIONAL THERAPIST										
Statewide	44	78	34	12	46	0	0	0	0	46
Area 1	8	11	3	0	3	0	0	0	0	3
" 2	1	7	6	0	6	0	0	0	0	6
" 3	6	8	2	0	2	0	0	0	0	2
" 4	0	1	1	0	1	0	0	0	0	1
" 5	4	8	4	0	4	0	0	0	0	4
" 6	24	39	15	12	27	0	0	0	0	27
" 7	1	4	3	0	3	0	0	0	0	3
OCCUPATIONAL THERAPY AID										
Statewide	55	73	18	0	18	7	0	0	7	11
Area 1	7	8	1	0	1	1	0	0	1	0
" 2	7	9	2	0	2	0	0	0	0	2
" 3	6	8	2	0	2	0	0	0	0	2
" 4	0	2	2	0	2	2	0	0	2	0
" 5	10	17	7	0	7	3	0	0	3	4
" 6	23	26	3	0	3	0	0	0	0	3
" 7	2	3	1	0	1	0	0	0	0	1

OCCUPATIONAL THERAPIST

Hospitals employed nearly 45 occupational therapists at the time this survey was conducted and, of this total, 86 percent were female.

Employment in this occupation may increase by 77 percent over the next six years; currently, there are 10 job vacancies.

No occupational therapy training is now offered by North Carolina schools.

OCCUPATIONAL THERAPY AID

In the spring of 1967, all of the surveyed occupational therapy aids were working in hospitals. Women accounted for 64 percent of the total number employed.

Employers estimated 35 workers would be needed for turnover purposes by 1973.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
PHYSICAL THERAPIST										
Statewide	141	258	117	42	159	0	168	1	169	— 10
Area 1	13	24	11	0	11	0	0	1	1	10
" 2	7	21	14	0	14	0	0	0	0	14
" 3	41	57	16	30	46	0	0	0	0	46
" 4	21	40	19	6	25	0	0	0	0	25
" 5	16	37	21	6	27	0	0	0	0	27
" 6	37	68	31	0	31	0	168	0	168	— 137
" 7	6	11	5	0	5	0	0	0	0	5
PHYSICAL THERAPY AID										
Statewide	103	201	98	6	104	28	0	0	28	76
Area 1	16	28	12	0	12	7	0	0	7	5
" 2	4	11	7	0	7	1	0	0	1	6
" 3	18	26	8	0	8	0	0	0	0	8
" 4	19	44	25	0	25	15	0	0	15	10
" 5	10	22	12	0	12	1	0	0	1	11
" 6	29	58	29	6	35	4	0	0	4	31
" 7	7	12	5	0	5	0	0	0	0	5

PHYSICAL THERAPIST

During the spring of 1967, the majority of physical therapists were working in hospitals. Of the total, 75 percent were female.

Although employment in this occupation is expected to nearly double during the next six years, 35 job vacancies were reported at survey time.

Duke University and the University of North Carolina at Chapel Hill are the only schools in the State offering training in this field. As in the case for pharmacy graduates, not all physical therapy graduates can be expected to seek work in North Carolina hospitals; thus, an oversupply of physical therapists may not exist.

PHYSICAL THERAPY AID

There were ten vacancies in this occupation at survey time.

During the spring of 1967, there were over 100 physical therapy aids working in surveyed facilities. A large majority of these jobholders were employed in hospitals, and more than 75 percent were female.

Survey data indicate turnover needs may almost double the combined total of expansion and replacement needs over the next six years.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
MEDICAL LIBRARIAN										
Statewide	36	49	13	6	19	1	0	0	1	18
Area 1	3	4	1	0	1	0	0	0	0	1
" 2	7	10	3	6	9	0	0	0	0	9
" 3	5	6	1	0	1	0	0	0	0	1
" 4	3	4	1	0	1	0	0	0	0	1
" 5	2	4	2	0	2	0	0	0	0	2
" 6	13	15	2	0	2	1	0	0	1	1
" 7	3	6	3	0	3	0	0	0	0	3
MEDICAL RECORD LIBRARIAN										
Statewide	170	228	58	54	112	2	101	0	103	9
Area 1	17	25	8	12	20	0	0	0	0	20
" 2	27	42	15	18	33	0	0	0	0	33
" 3	24	32	8	0	8	0	0	0	0	8
" 4	26	32	6	0	6	0	101	0	101	— 95
" 5	25	31	6	18	24	0	0	0	0	24
" 6	33	43	10	0	10	1	0	0	1	9
" 7	18	23	5	6	11	1	0	0	1	10

MEDICAL LIBRARIAN

During the survey period, there were approximately 35 medical librarians working in North Carolina hospitals and all were women.

MEDICAL RECORD LIBRARIAN

Medical record librarians are generally found working in hospitals. There were 15 jobs open in this occupation at survey time.

In the next six years total employment in this occupation is projected to increase by almost 60, if qualified applicants become available.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand: Expansion	Total Worker Demand: Replacement	Total Worker Demand: Total	Trained Worker Supply: On-the-Job	Trained Worker Supply: School	Trained Worker Supply: Unemployed	Trained Worker Supply: Total	Net Training Needs
MEDICAL SUPPLY CLERK										
Statewide	374	489	115	60	175	19	0	2	21	154
Area 1	17	22	5	0	5	0	0	1	1	4
" 2	20	40	20	0	20	3	0	0	3	17
" 3	82	88	6	24	30	0	0	0	0	30
" 4	64	84	20	6	26	11	0	0	11	15
" 5	34	43	9	0	9	4	0	1	5	4
" 6	135	179	44	30	74	1	0	0	1	73
" 7	22	33	11	0	11	0	0	0	0	11
MEDICAL RECORD CLERK										
Statewide	525	734	209	108	317	15	0	1	16	301
Area 1	46	65	19	6	25	2	0	1	3	22
" 2	67	101	34	36	70	3	0	0	0	67
" 3	86	104	18	6	24	0	0	0	0	24
" 4	76	103	27	6	33	5	0	0	5	28
" 5	81	109	28	18	46	2	0	0	2	44
" 6	140	210	70	36	106	3	0	0	3	103
" 7	29	42	13	0	13	0	0	0	0	13

MEDICAL SUPPLY CLERK

In the spring of 1967, medical supply clerks were mostly employed in hospitals, but some were employed in nursing homes and rest homes. Women comprised slightly more than 80 per cent of the nearly 375 employees in this job.

By 1973, 115 workers, an increase of 31 percent, will be needed for expansion purposes, with 9 percent needed to fill existing vacancies at survey time.

Only 10 employees were needed for replacements in the prior year. The turnover experience was almost 10 times as many, or about one in four of the employed either voluntarily quit or were discharged.

Administrators in Area Two anticipate doubling their present employment of medical supply clerks by 1973.

MEDICAL RECORD CLERK

Based on 1967 survey findings, medical record clerks employed in hospitals accounted for 98 percent of the total surveyed.

Expansion needs by 1973, will require over 200 additional workers. Of this number, about 25 were needed at survey time to fill existing vacancies.

During the past year, almost 20 workers were hired for replacements and over 140 for turnover needs. The same trend, for replacement and turnover needs is anticipated for the remaining years of the survey period.

The supply of trained workers will fall significantly below the number needed for expansions and replacements by 1973.

Area six employed more than one-fourth of the medical record clerks surveyed in the spring of 1967. Planned expansions will require a 50 percent rise in employment by 1973. Following the statewide trend, the demand by 1973, will greatly outnumber the supply.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment		Total Worker Demand			Trained Worker Supply				Net Training Needs
	Spring 1967	Anticipated 1973	Expansion	Replacement	Total	On-the-Job	School	Unemployed	Total	
MEDICAL OFFICE ASSISTANT										
Statewide	2,611	3,164	553	1,224	1,777	259	72	8	339	1,438
Area 1	358	437	79	180	259	61	0	3	64	195
" 2	263	325	62	114	176	0	0	0	0	176
" 3	643	761	116	228	346	76	24	0	100	246
" 4	444	538	94	138	232	29	0	1	30	202
" 5	318	418	100	174	274	24	0	2	26	248
" 6	376	441	65	246	311	24	24	0	48	263
" 7	209	244	35	144	179	45	24	2	71	108
INSURANCE CLERK										
Statewide	469	655	186	84	270	32	0	0	32	238
Area 1	52	74	22	18	40	2	0	0	2	38
" 2	63	102	39	12	51	8	0	0	8	43
" 3	73	95	22	0	22	3	0	0	3	19
" 4	66	76	10	0	10	7	0	0	7	3
" 5	66	91	25	18	43	1	0	0	1	42
" 6	109	168	59	24	83	8	0	0	8	75
" 7	40	49	9	12	21	3	0	0	3	18

MEDICAL OFFICE ASSISTANT

Physicians employed over 2,610 medical office assistants during the spring of 1967.

Thirty vacancies were reported at survey time.

INSURANCE CLERK

In the spring of 1967, insurance clerks were employed almost entirely by the hospitals surveyed. Of the nearly 470 employees, 98 percent or 460 were female.

Of the 185 workers needed for expansion of services and facilities by 1973, seven percent were needed at survey time to fill existing vacancies.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
MEDICAL TECHNOLOGIST										
Statewide	1,089	1,543	454	288	742	0	625	2	627	115
Area 1	89	134	45	18	63	0	10	1	11	52
" 2	140	189	49	18	67	0	0	0	0	67
" 3	197	260	63	90	153	0	45	0	45	108
" 4	155	201	46	36	82	0	186	1	187	— 105
" 5	137	184	47	96	143	0	0	0	0	143
" 6	306	479	173	18	191	0	384	0	384	— 193
" 7	65	96	31	12	43	0	0	0	0	43
CYTOTECHNOLOGIST										
Statewide	51	86	35	6	41	0	40	0	40	1
Area 1	1	3	2	0	2	0	0	0	0	2
" 2	7	12	5	0	5	0	0	0	0	5
" 3	15	21	6	6	12	0	13	0	13	— 1
" 4	14	16	2	0	2	0	27	0	27	— 25
" 5	2	6	4	0	4	0	0	0	0	4
" 6	10	21	11	0	11	0	0	0	0	11
" 7	2	7	5	0	5	0	0	0	0	5

MEDICAL TECHNOLOGIST

During the spring of 1967, surveyed health facilities employed almost 1,090 medical technologists and of that number, 85 percent were women. Hospitals were the main source of employment for workers in this field.

The survey revealed that there were 90 vacancies for medical technologists in the spring of 1967.

CYTOTECHNOLOGIST

During the spring of 1967, cytotechnologists were employed in hospitals and pathology laboratories, with the majority working in hospitals.

Survey data show there were over 50 of these technologists working in North Carolina at survey time; and of this total, 92 percent were female.

The available supply of trained workers from schools, if retained in the State, is expected to offset employer needs by both the spring of 1970 and 1973.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
ELECTROENCEPHALOGRAPH TECHNICIAN										
Statewide	29	52	23	0	23	6	0	0	6	17
Area 1	0	2	2	0	2	2	0	0	2	0
" 2	0	3	3	0	3	0	0	0	0	3
" 3	4	6	2	0	2	0	0	0	0	2
" 4	8	13	5	0	5	2	0	0	2	3
" 5	2	5	3	0	3	0	0	0	0	3
" 6	15	21	6	0	6	2	0	0	2	4
" 7	0	2	2	0	2	0	0	0	0	2
ELECTRO-CARDIOGRAPH TECHNICIAN										
Statewide	93	141	48	18	66	14	0	0	14	52
Area 1	4	8	4	0	4	2	0	0	2	2
" 2	8	21	13	0	13	2	0	0	2	11
" 3	21	25	4	0	4	0	0	0	0	4
" 4	12	18	6	0	6	3	0	0	3	3
" 5	15	19	4	6	10	2	0	0	2	8
" 6	27	39	12	6	18	4	0	0	4	14
" 7	6	11	5	6	11	1	0	0	1	10

ELECTROENCEPHALOGRAPH TECHNICIAN

In the spring of 1967, only four areas in the State employed full time EEG technicians. By 1973, however, hospitals in all areas expect to expand service or facilities to include these employees. The major portion of those surveyed were women.

By 1973, the number of EEG technicians is expected to increase by almost 80 percent over 1967 employment. On-the-job training programs will provide only six of the additional 25 workers needed.

At survey time, all jobs were filled and administrators indicated no employees were needed in the past year for replacements. For the same period, employers estimated eight workers were needed because of turnover.

ELECTROCARDIOGRAPH TECHNICIAN

Hospitals in the State employed almost 95 EKG technicians either on a full or more than half-time basis in the spring of 1967. Of this number, around 85 or almost 94 percent were women.

During the past year, three workers were hired as replacements and 20 because of turnover.

Employers estimated they will train roughly 15 or about one-fifth of the number needed by 1973 for expansions and replacements.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment Spring 1967	Surveyed Employment Anticipated 1973	Total Worker Demand Expansion	Total Worker Demand Replacement	Total Worker Demand Total	Trained Worker Supply On-the-Job	Trained Worker Supply School	Trained Worker Supply Unemployed	Trained Worker Supply Total	Net Training Needs
RADIOLOGIC TECHNOLOGIST										
Statewide	759	1,122	363	264	627	84	794	2	880	– 253
Area 1	69	99	30	12	42	25	24	1	50	– 8
" 2	81	133	52	12	64	0	54	0	54	10
" 3	127	158	31	6	37	0	159	0	159	– 122
" 4	118	165	47	0	47	0	230	0	230	– 183
" 5	81	130	49	24	73	12	8	0	20	53
" 6	235	353	118	180	298	47	319	1	367	– 69
" 7	48	84	36	30	66	0	0	0	0	66
ORTHOPEDIC-CAST SPECIALIST										
Statewide	9	12	3	0	3	1	0	0	1	2
Area 1	1	1	0	0	0	0	0	0	0	0
" 2	1	2	1	0	1	0	0	0	0	1
" 3	1	1	0	0	0	0	0	0	0	0
" 4	2	3	1	0	1	1	0	0	1	0
" 5	1	1	0	0	0	0	0	0	0	0
" 6	2	2	0	0	0	0	0	0	0	0
" 7	1	2	1	0	1	0	0	0	0	1

RADIOLOGIC TECHNOLOGIST

The surveyed employment in this occupation consisted of almost 760 workers, of which 81 percent were female. Of these, 523 were employed in hospitals, and 230 were working in doctors' offices.

During the next six years, turnover needs are expected to outnumber expansion needs nearly 3 to 1.

There were 35 reported vacancies for radiologic technologists at survey time.

ORTHOPEDIC-CAST SPECIALIST

During the survey period, there were around 10 orthopedic-cast specialists working in North Carolina hospitals.

Expansion needs are expected to be about 5 by 1973, and there are no anticipated needs for either replacement or turnover during the projected period.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment		Total Worker Demand			Trained Worker Supply				Net Training Needs
	Spring 1967	Anticipated 1973	Expansion	Replacement	Total	On-the-Job	School	Unemployed	Total	
DIETITIAN										
Statewide	281	467	186	132	318	0	83	0	83	235
Area 1	26	34	8	18	26	0	0	0	0	26
" 2	42	60	18	6	24	0	0	0	0	24
" 3	44	53	9	12	21	0	0	0	0	21
" 4	34	49	15	18	33	0	0	0	0	33
" 5	43	52	9	6	15	0	0	0	0	15
" 6	71	193	122	72	194	0	83	0	83	111
" 7	21	26	5	0	5	0	0	0	0	5
COOK										
Statewide	1,517	1,766	249	342	591	64	0	24	88	503
Area 1	165	198	33	42	75	13	0	4	17	58
" 2	232	290	58	36	94	13	0	6	19	75
" 3	199	226	27	30	57	10	0	0	10	47
" 4	177	206	29	30	59	11	0	1	12	47
" 5	294	333	39	78	117	8	0	1	9	108
" 6	325	367	42	78	120	7	0	9	16	104
" 7	125	146	21	48	69	2	0	3	5	64

DIETITIAN

Of the dietitians and dietary supervisors employed at survey time, 235 were working in hospitals, 35 in nursing homes, and 10 in rest homes; and of these, 97 percent were female.

COOK

At survey time, there were over 1,515 cooks working in the surveyed health service facilities in this State. Of this total, 57 percent were located in hospitals.

Surveyed establishments indicated 35 job vacancies existed during the spring of 1967.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment		Total Worker Demand			Trained Worker Supply				Net Training Needs
	Spring 1967	Anticipated 1973	Expansion	Replacement	Total	On-the-Job	School	Unemployed	Total	
DIRECTOR VOLUNTEER SERVICES										
Statewide	40	63	23	0	23	2	0	0	2	21
Area 1	4	4	0	0	0	0	0	0	0	0
" 2	5	11	6	0	6	1	0	0	1	5
" 3	8	11	3	0	3	0	0	0	0	3
" 4	6	13	7	0	7	1	0	0	1	6
" 5	8	11	3	0	3	0	0	0	0	3
" 6	8	12	4	0	4	0	0	0	0	4
" 7	1	1	0	0	0	0	0	0	0	0
HOUSEKEEPER										
Statewide	410	531	121	138	259	29	0	0	29	230
Area 1	54	66	12	42	54	11	0	0	11	43
" 2	54	85	31	6	37	0	0	0	0	37
" 3	54	73	19	6	25	8	0	0	8	17
" 4	60	73	13	0	13	7	0	0	7	6
" 5	80	91	11	36	47	0	0	0	0	47
" 6	86	113	27	48	75	3	0	0	3	72
" 7	22	30	8	0	8	0	0	0	0	8

DIRECTOR, VOLUNTEER SERVICES

At survey time, a large majority of the 40 volunteer service directors were employed in hospitals, and women comprised 90 percent of these jobholders.

An increase of almost 25 by 1973 is forecast for this occupation in the participating institutions.

HOUSEKEEPER

In this occupation, 290 persons were working in hospitals, 60 were working in rest homes, and 60 were working in nursing homes. Men filled about one-fourth of these positions.

During the next six years, turnover needs are forecast to outnumber expansion needs 4 to 1.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment		Total Worker Demand			Trained Worker Supply				Net Training Needs
	Spring 1967	Anticipated 1973	Expansion	Replacement	Total	On-the-Job	School	Unemployed	Total	
WARD MAID										
Statewide	1,864	2,465	601	222	823	197	0	14	211	612
Area 1	157	199	42	12	54	17	0	0	17	37
" 2	206	289	83	72	155	21	0	3	24	131
" 3	325	401	76	6	82	28	0	6	34	48
" 4	286	379	93	24	117	60	0	1	61	56
" 5	272	367	95	30	125	33	0	2	35	90
" 6	479	649	170	78	248	29	0	0	29	219
" 7	139	181	42	0	42	9	0	2	11	31
PORTER										
Statewide	1,321	1,787	466	228	694	144	0	102	246	448
Area 1	169	213	44	24	68	25	0	11	36	32
" 2	99	151	52	42	94	11	0	12	23	71
" 3	199	279	80	72	152	45	0	1	46	106
" 4	194	255	61	6	67	23	0	23	46	21
" 5	229	295	66	30	96	14	0	13	27	69
" 6	355	489	134	36	170	19	0	31	50	120
" 7	76	105	29	18	47	7	0	11	18	29

WARD MAID

A total of nearly 1,865 ward maids were employed in medical establishments in the spring of 1967. Of this number, 1,550 were working in hospitals, 155 in nursing homes, and 160 in rest homes. By the end of the survey period, employment for this job will have to be increased by almost one-third to take care of the needs for planned expansions. Of the number projected for expansion, almost five percent were needed immediately to fill vacant positions.

The demand for ward maids by 1973, will outnumber by more than 600, the currently projected trained worker supply.

PORTER

Hospitals were the principal users of this type worker and employed almost 95 percent of the total working in the medical field.

Expansion plans call for a 35 percent increase over the number employed in the spring of 1967. There were 105 vacant jobs for porters at survey time.

A significant number of trained workers will be needed by 1973 for planned expansion and replacement needs. On-the-job training and those unemployed will furnish about one-third of the demand. The supply, however, will fall almost 450 workers short of meeting the anticipated demand by 1973.

Based on the survey data, employers estimated about three porters per month were needed for replacements during the past year. The turnover experience for the same period was not so favorable. Some employers estimated the annual turnover rate for porters to be around 50 percent.

TABLE XII: OCCUPATIONAL DEMAND, SUPPLY AND NET TRAINING NEEDS BY AREA

Region	Surveyed Employment		Total Worker Demand			Trained Worker Supply				Net Training Needs
	Spring 1967	Anticipated 1973	Expansion	Replacement	Total	On-the-Job	School	Unemployed	Total	
SURGICAL TECHNICIAN										
Statewide	376	583	207	18	225	70	0	0	70	155
Area 1	50	71	21	0	21	15	0	0	15	6
" 2	22	62	40	12	52	0	0	0	0	52
" 3	78	123	45	0	45	27	0	0	27	18
" 4	65	92	27	0	27	20	0	0	20	7
" 5	43	55	12	0	12	0	0	0	0	12
" 6	97	142	45	0	45	8	0	0	8	37
" 7	21	38	17	6	23	0	0	0	0	23
WARD CLERK										
Statewide	949	1,378	429	180	609	142	145	8	295	314
Area 1	90	142	52	24	76	10	68	0	78	— 2
" 2	80	127	47	36	83	4	0	3	7	76
" 3	179	221	42	0	42	14	0	0	14	28
" 4	167	216	49	18	67	45	0	0	45	22
" 5	145	211	66	60	126	8	77	2	87	39
" 6	237	383	146	42	188	61	0	0	61	127
" 7	51	78	27	0	27	0	0	3	3	24

SURGICAL TECHNICIAN

Based on the survey results, approximately 375 surgical technicians were working in hospitals in the spring of 1967. Of the total employed in this job, more than 84 percent were women.

During the past year, the turnover rate for surgical technicians was almost 27 percent, or around one out of every four employed.

WARD CLERK

The survey revealed that a sharp rise is anticipated in the number of ward clerks employed in the State's hospitals.

Employers estimated that around 330 employees, or almost one out of three, either quit or were discharged in the past year.

APPENDIX A

Definitions

DEFINITIONS OF OCCUPATIONS SURVEYED

Shown below is a brief definition of each occupation with cross references to the "Dictionary of Occupational Titles—Third Edition" and DOT codes.

ADMINISTRATOR: Administers and coordinates activities of personnel to promote care and treatment of patients in hospitals, nursing home, or rest home. Carries out program under established policies from governing board. Directs and coordinates activities of medical, nursing and administration staff. Develops policies and procedures for various activities. (DOT Reference—SUPERINTENDENT, HOSPITAL: 187.118)

ADMINISTRATIVE ASSISTANT: Assists the administrator in staff capacity by coordinating office services such as personnel, budget preparation and control, records control and special management studies. Coordinates collection and preparation of operating reports. Issues and interprets operating policies. Reviews and answers correspondence. May assist in preparation of budget needs and annual reports of organizations. May interview job applicants, conduct orientation of new employees and plan training programs. (DOT Reference—ADMINISTRATIVE ASSISTANT: 169.168)

ADMITTING CLERK, HOSPITAL: Interviews incoming patient or representative to obtain personal information, records information required for admission and assigns patient to room. Types admitting records and routes to designated department. Obtains signed statement from patient to protect hospital's interests. May store patients' valuables and receive payments on account. May obtain information on patient's insurance coverage. (DOT Reference — ADMITTING CLERK, HOSPITAL: 237.368)

ADMITTING OFFICER: Arranges for admission of patients to hospital. Assigns accommodations based on physician's orders, patient's preference, nature of illness and availability of space. Prepares records of admission, transfer, and other data that may be required. Sends notices of patient's admission to pertinent departments. Directs and reviews work of clerical and other personnel in admitting patients. Keeps records of admissions and discharges, and compiles perpetual occupancy-census data. (DOT Reference—ADMITTING OFFICER: 237.368)

CHILD CARE ATTENDANT: Cares for group of children housed in city, county or other governmental institution, under supervision of superintendent of home. Awakens children each morning and insures that they are dressed, fed, and ready for school or other activities. Gives instructions to children regarding health and personal habits. Provides and leads recreational activities. Disciplines children and recommends other measures to control behavior. May supervise housekeeping activities in assigned section of institution. (DOT Reference—CHILD CARE ATTENDANT: 359.878)

COTTAGE PARENT: Serves mentally retarded and epileptic patients in their daily activities. Observes patients and reports to supervisor any physical or emotional irregularity. Attends to personal hygiene of patients unable to help themselves and directs these activities of others. Performs housekeeping duties in cottage. Accompanies patients to daily activities and maintains discipline. Prepares daily reports of cottage activities and keeps inventory of supplies. (DOT Reference—COTTAGE PARENT: 355.878)

COOK: Assists in the preparation of a complete meal by cooking vegetables and meats in kitchen of an institution. Work is performed in accordance with menus prepared and quantities designated by dietary staff. (DOT Reference—COOK: 315.381)

CYTOTECHNOLOGIST: Stains, mounts, and studies cells of human body to determine pathological condition. Adds various dyes and reagents to render specimens more visible. Examines specimens, and diagnoses nature and extent of disease or cellular damage. Executes variety of laboratory tests to confirm findings. Reports information to Pathologist. (DOT Reference — CYTOTECHNOLOGIST: 078.281)

DENTAL ASSISTANT: Performs a variety of duties in a dental office assisting the dentist in the treatment of patients. Arranges dental instruments, materials, and medications and hands them to dentist as required. Prepares dental amalgams, and supplies filling material to dentist as required during placement of restorations. Sterilizes and stores instruments. Maintains patients' records, schedules appointments, and collects fees for services. May expose and process dental X-ray films as directed by dentist. (DOT Reference—DENTAL ASSISTANT: 079.378)

DENTAL HYGIENIST: Performs dental prophylactic treatments and instructs groups and individuals in care of teeth and mouth. Cleans teeth by removing tartar and calcareous deposits. Charts conditions of decay and disease for diagnosis and treatment by dentist. Lectures community organizations and other groups regarding oral hygiene. (DOT Reference—DENTAL HYGIENIST: 078.368)

DENTAL-LABORATORY TECHNICIAN: Constructs and repairs dental appliances, according to dentist's prescription. Fabricates full and partial dentures, using wax and plaster models, surveyors, tooth color scales, articulators, and electric grinders and polishers. Constructs crowns, inlays, and wire frames by forming (bending and soldering) gold and platinum wire, or by casting in mold in centrifugal casting furnace. Constructs porcelain teeth from impression, using powdered porcelain and water. Polishes metal and plastic portions of completed appliance with electric grinders and polishers and tests it for occlusal harmony, using articulator. (DOT Reference—DENTAL-LABORATORY TECHNICIAN: 712.381)

DIETITIAN: Plans and directs food service programs in hospitals, schools or other institutions. Plans menus and diets. Directs workers engaged in preparation and serving of meals. Purchases or requisitions food supplies. Inspects work areas to insure observance of sanitary standards. (DOT Reference—DIETITIAN: 077.168)

DIRECTOR, VOLUNTEER SERVICES: Directs and coordinates work of volunteer agencies and workers offering their services to hospitals or other institutions. Organizes classes of instruction for volunteers to teach the proper procedures and techniques. Suggests and directs projects to be carried out by volunteer workers. (DOT Reference—DIRECTOR, VOLUNTEER SERVICES: 187.168)

ELECTROCARDIOGRAPH TECHNICIAN: Records electromotive variations in action of heart muscles, using electrocardiograph machine, to provide data for diagnosis of heart ailments. Sets up machine and attaches electrodes to specified areas of patient's body. Sends completed tracings to cardiologist or physician for analysis and interpretation. (DOT Reference—ELECTROCARDIOGRAPH TECHNICIAN: 078.368)

ELECTROENCEPHALOGRAPH TECHNICIAN: Measures impulse frequencies and differences in electrical potential between various portions of the brain, using equipment that records data as a series of irregular lines on a continuous graph to be used in diagnosing brain disorders. Sets up machine and fastens electrodes to patient's head according to specified pattern. Observes patient's behavior and makes notes on graph. (DOT Reference—ELECTROENCEPHALOGRAPH TECHNICIAN: 078.368)

HOUSEKEEPER: Supervises work activities of cleaning personnel in hospitals or similar establishments. Assigns workers their duties, and inspects work for conformance to prescribed standards of cleanliness. Investigates complaints regarding housekeeping service and takes corrective action. Examines physical condition of establishment and makes recommendations for repairs. May screen applicants, train new employees, and recommend dismissals. (DOT Reference—HOUSEKEEPER: 321.138)

HOME HEALTH AID: Cares for elderly, convalescent, or handicapped persons in patient's home. Changes bed linens, washes and irons patient's laundry, and cleans patient's quarters. Purchases, prepares and serves food. Assists patient to dress, bathe, and groom self. Massages patient and applies nonmedical preparations and treatments. Accompanies ambulatory patients outside home, serving as companion and aid. Performs a varity of miscellaneous duties as requested. (DOT Reference—HOME HEALTH AID: 354.878)

HOMEMAKER: Employed by welfare agency to take charge of home because of illness or absence of mother. Performs a variety of duties such as planning and preparing meals, purchasing household supplies, washing and ironing laundry, cleaning house and furnishings, and rendering personal service to family members. Oversees activities of children. (DOT Reference—HOMEMAKER: 306.878)

INHALATION THERAPIST: Sets up and operates various types of oxygen equipment such as iron lungs, oxygen tents, etc., to administer oxygen and other gases to patients under controlled conditions. Work is performed in accordance with instructions given by physician. Maintains, cleans and repairs equipment. (DOT Reference—INHALATION THERAPIST: 079.368)

INSURANCE CLERK: Verifies hospitalization insurance coverage and computes benefits for patients in hospital. Types insurance assignment form. Computes total hospital bill showing amount to be paid by insurance company and by patient. Answers patient's questions regarding statements and insurance coverage. (DOT Reference—INSURANCE CLERK: 210.368)

MEDICAL LABORATORY ASSISTANT: Performs routine tests in medical laboratory for use in treatment and diagnosis of disease. Prepares tissue samples, blood samples, and prepares vaccines. Executes such laboratory tests as urinalysis and blood counts. Makes quantitative and qualitative chemical and biological analyses of body specimens under supervision of medical technologist or pathologist. May be designated according to field of specialization such as Blood-Bank Technician; Hematology Technician; Serology Technician; and Tissue Technician. (DOT Reference — MEDICAL LABORATORY ASSISTANT: 078.381)

MEDICAL LIBRARIAN: Manages hospital library of specialized materials. Arranges special collections of technical books, periodicals, film strips, microcards and journal reprints. Searches literature and compiles accession lists. Assists staff in research problems. (DOT Reference—MEDICAL LIBRARIAN: 100.168)

MEDICAL OFFICE ASSISTANT: Performs a variety of clerical duties in a physician's office. Answers telephone, schedules appointments, and composes and types routine correspondence. Receives patients in office and pulls medical records. Files correspondence and other records. Accepts payments from patients and issues receipts. Prepares and sends statements to patients. Performs other clerical duties as directed. (DOT Reference—Developed from SECRETARY: 201.368)

MEDICAL RECORD LIBRARIAN: Compiles and maintains medical records of hospital and clinic patients. Reviews clinical records for completeness and contacts medical personnel for missing data. Codes, indexes, and files record of diagnosis, disease, and treatments. Releases medical information to staff and other authorized personnel. May brief and transcribe records. (DOT Reference — MEDICAL RECORD LIBRARIAN: 100.388)

MEDICAL RECORD CLERK: Classifies medical records of hospital patients and compiles statistics for use in reports and surveys. Keeps daily statistical records of information such as admissions, discharges, deaths, births and type of treatment rendered, using records of admission, discharge slips and medical charts. (DOT Reference — MEDICAL RECORD CLERK: 249.388)

MEDICAL SUPPLY CLERK: Assembles, cleans and packs hospital supplies for doctors, nurses, and technicians. Cleans used supplies such as thermometers, syringes and needles. Assembles and packs diagnostic and treatment trays. Assembles and wraps surgical gloves prior to sterilization. May dispense and deliver supplies. May fill requisitions, write charges, and inventory supplies. May prepare solutions according to prescribed formula. May be assigned to such hospital rooms as surgery and delivery rooms. (DOT Reference — CENTRAL SUPPLY WORKER: 223.887)

MEDICAL TECHNOLOGIST: Performs chemical, microscopic and bacteriologic tests to provide data for use in treatment and diagnosis of disease. Obtains specimens such as urine, blood, pus and tissue directly from patient and makes quantitative and qualitative chemical analyses. May supervise laboratory assistants in assigned section or area of specializations. (DOT Reference — MEDICAL TECHNOLOGIST: 078.281)

NURSE AID: Assists in care of hospital patients under direction of nursing and medical staff. Answers signal lights and bells to determine patient's needs. Transports patients to treatment units. Takes and records temperatures, pulse and respiration rates, and food and liquid intake and output as directed. May help bathe, dress and undress patients. (DOT Reference — NURSE AID: 355.878)

NURSE, LICENSED, PRACTICAL: Cares for ill, injured, convalescent, and handicapped persons in hospitals, clinics, nursing homes and similar institutions. Takes and records temperature, blood pressure, and pulse and respiration rate. Dresses wounds, gives alcohol rubs, and massages. Applies compresses, icebags, and hot water bottles. Observes patients and reports adverse reaction to physician or Nurse, General Duty. Administers specified medication, and notes time and amount on patient's charts. Must pass State Board Examination and be licensed by State. (DOT Reference — NURSE, LICENSED, PRACTICAL: 079.378)

NURSE, PUBLIC HEALTH: Renders services concerned with public health, working in government or voluntary public health agency, and instructs lay persons in health education and disease prevention. Visits home to render nursing service and instructs families in care of patients and maintenance of healthful environment. Gives specialized treatments according to physician's instructions. Assists in preparation of special studies, research programs, and immunization programs. May specalize in particular phase of public health nursing such as clinical pediatrics or tuberculosis. (DOT Reference — NURSE, PUBLIC HEALTH: 075.128)

NURSE, REGISTERED: Renders nursing care to patients in hospital, infirmary, sanatorium or other similar institution. Administers prescribed medications and treatments in accordance with approved nursing techniques. May assist with operations and deliveries. Usually rotates among various clinical services of institution such as obstetrics, operating rooms, orthopedics, pediatrics, psychiatry and surgery. (DOT Reference — NURSE, REGISTERED: 075.378)

OCCUPATIONAL THERAPIST: Plans, organizes and participates in medically oriented occupational program in hospital or similar institution to rehabilitate patients who are physically or mentally ill. Utilizes creative and manual arts, recreational, educational and social activities and training in every day activities, such as personal care and homemaking. Writes reports on patient's progress in and reactions to occupational therapy. May make and fit devices such as splints and braces following physician's instructions. (DOT Reference — OCCUPATIONAL THERAPIST: 079.128)

OCCUPATIONAL THERAPY AID: Assists Occupational Therapist in administering medically oriented occupational program to assist in rehabilitating patients in hospitals and similar institutions. Instructs patients in manual and creative arts, games, crafts, and other activities. Reports to and consults with occupational therapist regarding patient's performance and changes in program procedures. (DOT Reference — OCCUPATIONAL THERAPY AID: 079.368)

ORDERLY: Performs a variety of nonprofessional tasks under the direction of nursing or medical staff, in the care of physically or mentally ill patients. Bathes and shaves patients, takes and records temperature, pulse and respiration rate. Measures and records intake and output of liquids. Transports patients to and from treatment units. (DOT Reference — ORDERLY: 355.878)

ORTHOPEDIC-CAST SPECIALIST: Molds plaster of paris casts for patients, working under the direction of attending physician. Covers injured areas with stockinette and applies wet plaster bandage to immobilize injured areas. Applies splints and straps as directed. Removes casts, using electric cutter, spreader, shears and knife. (DOT Reference — ORTHOPEDIC-CAST SPECIALIST: 712.884)

PHARMACIST: Compounds and dispenses medications, following prescriptions of authorized medical personnel. Weighs, measures and mixes drugs and other medicinal compounds with correct quantity and composition of preparations. Stores and preserves biologicals, vaccines, serums and other drugs. Orders and maintains supply of drugs, chemicals and other pharmaceutical stock. (DOT Reference — PHARMACIST: 074.181)

PHARMACY HELPER: Performs routine duties in pharmacy. Receives, unpacks and stores supplies. Delivers drug orders and cleans work area. Under direct supervision of pharmacist, assists in preparation of various pharmaceutical preparations and in labeling bottles. Maintains card file of purchases. Performs related routine tasks. (DOT Reference — PHARMACY HELPER: 074.387)

PHYSICAL THERAPIST, LICENSED: Treats patients with disabilities and injuries to relieve pain, develop or restore function and maintain maximum performance, using physical means, such as exercise, massage, heat, water, light, and electricity as prescribed by physician. Keeps record of treatment given and patient's response and progress. (DOT Reference — PHYSICAL THERAPIST, LICENSED: 079.378)

PHYSICAL THERAPY AID: Assists physical therapist in the treatment of patients as directed. Assists patients in dressing, undressing and moving about. Sets up and assembles such equipment as hydrotherapy tanks and vibrators. Places patients in position for treatment. Times length of treatment. Changes linen on treatment tables and cleans work area. (DOT Reference — PHYSICAL THERAPY AID: 355.878)

PORTER: Performs a variety of duties in keeping establishment in a clean and orderly condition. Sweeps, mops, scrubs, waxes, and polishes floor using hand and power equipment. Dusts furniture, walls and other equipment. Performs other cleaning duties as directed by Housekeeper. (DOT Reference — PORTER: 381.887)

PSYCHIATRIC AID: Assists nursing and medical staff in caring for mentally ill patients. Accompanies patients to and from wards for examination and treatment, and administers prescribed medications. Assists patients in becoming accustomed to hospital routine and encourages them to participate in social and recreational activities. Observes patients to detect unusual behavior and restrains them to prevent injury to themselves or to others. (DOT Reference — PSYCHIATRIC AID: 355.878)

RADIOLOGIC TECHNOLOGIST: Operates X-ray equipment in application of roentgen rays and radioactive substances for diagnostic and therapeutic purposes. Makes minor adjustments to X-ray equipment, exposes X-rays, develops film and assists physician with fluoroscopy. Assists in treating diseased or affected areas of body, under supervision of physician, by exposing area to specified concentrations of X-rays. (DOT Reference — RADIOLOGIC TECHNOLOGIST: 078.368)

RECREATIONAL THERAPIST: Plans, organizes and directs, in conjunction with physician, medically approved recreation program in hospital or similar institution. Directs such activities as adapted sports, dramatics, arts and crafts, regulating content in accordance with patient's capabilities, needs and interests. Prepares reports for physician describing patient's reactions, and symptoms indicative of progress or regression. (DOT Reference — RECREATIONAL THERAPIST: 079.128)

SANITARIAN: Plans, develops, and executes environmental health program. Organizes and conducts training program in environmental health practices for schools and other groups. Determines and sets health and sanitation standards and enforces regulations concerned with food processing and serving and in the collection and disposal of waste materials. Confers with government, community, and private organizations to interpret and promote environmental health programs. Collaborates with other health personnel in epidemiological investigations and controls. (DOT Reference — SANITARIAN: 079.118)

SANITARIAN AID: Investigates public and private establishments, such as restaurants, hotels, and cafeterias, to determine compliance with public sanitation laws and regulations. Inspects eating and drinking establishments for cleanliness. Issues violation notices and corrective orders when violations are found. Takes samples of such materials as water, food, and air to determine contamination. Assists sanitarian in conducting phases of environmental health programs. (DOT Reference — SANITARIAN AID: 168.287)

SURGICAL TECHNICIAN: An employee in this class is considered as assistant to the Operating Room Supervisor, and is responsible for assisting in setting up the operating room prior to surgery, assisting surgeons and nurses during the operation, and cleaning up, accounting for and sterilizing equipment after operation is completed. (DOT Reference — SURGICAL TECHNICIAN: 079.378)

WARD CLERK: Performs a variety of clerical duties at a hall desk or nursing unit in a hospital. Keeps patient's charts posted from duty nurse's notations on patient's condition. Records diet instructions. Maintains file of records on patients in unit. Requisitions supplies designated by nursing staff. Answers telephone calls to ward, gives out information and takes messages. Performs a variety of other closely related tasks. (DOT Reference — WARD CLERK: 219.388)

WARD MAID: Performs general cleaning duties in hospital wards, rooms, baths, etc., such as mopping, waxing and dusting. Distributes linens in wards and remakes beds. May serve patient's meals and remove trays. (DOT Reference — WARD MAID: 323.887)

APPENDIX B

Additional Tables and Charts

TABLE XIII: NON-SURVEYED OCCUPATIONS CONSIDERED IN SHORT SUPPLY BY SAMPLED EMPLOYERS

OCCUPATIONS

Accountant
Air Hygienist
Anesthetist - Nurse Anesthetist
Bacteriologist
Barber
Beautician
Business Manager - Controller
Business Office Machine Operator
Business Office Worker
Clerk - Typist
Dental Apprentice
Diet Supervisor
Dietary Workers - Aids
Food Server
Groundskeeper
Group Therapy Aid
Health Director
Health Educator
Hearing - Speech Therapist
Histotechnologist
Immunization Education Aid
Key Punch Operator
Laundry Worker
Linen Room Attendant
Maintenance Engineer

OCCUPATIONS

Maintenance Helper
Maintenance Mechanic
Medical Record Technician
Medical Service Supervisor
Medical Transcriptionist
Night Watchman
Nursing Educational Instructor
Nursing Unit Supervisor - Manager
Nutritionist - Assistant Dietitian
Orthoptic Technician
Painter
Receptionist
Rehabilitation Technician
Research Scientist
Seamstress
Secretary - Stenographer
Security Guard
Social Worker - Caseworker
Soda Shop Clerk
Special Education Teacher
Special Training Instructor
Stockroom Clerk - Dietary
Switchboard Operator PBX
Technical - Clinical Aid
Truck Driver

TABLE XIV: AREA DISTRIBUTION OF CURRENT JOB VACANCIES BY TYPE OF HEALTH FACILITY SURVEYED

SPRING 1967

Area	Total	Hospitals	Nursing Homes	Rest Homes	Physicians' Offices	Dentists' Offices	All Other[1]
STATE TOTAL	2,898	2,105	185	33	122	346	107
AREA 1	313	241	15	3	12	34	8
AREA 2	375	306	14	5	6	36	8
AREA 3	588	417	41	7	16	88	19
AREA 4	490	288	48	3	30	79	42
AREA 5	403	279	38	9	30	37	10
AREA 6	540	423	28	3	18	54	14
AREA 7	189	151	1	3	10	18	6

[1]*Includes Health Departments, Welfare Departments, Dental Laboratories, and Pathology Laboratories.*

CHART G: NUMBER YEARS EDUCATION AND TRAINING NORMALLY REQUIRED FOR HEALTH SERVICE OCCUPATIONS

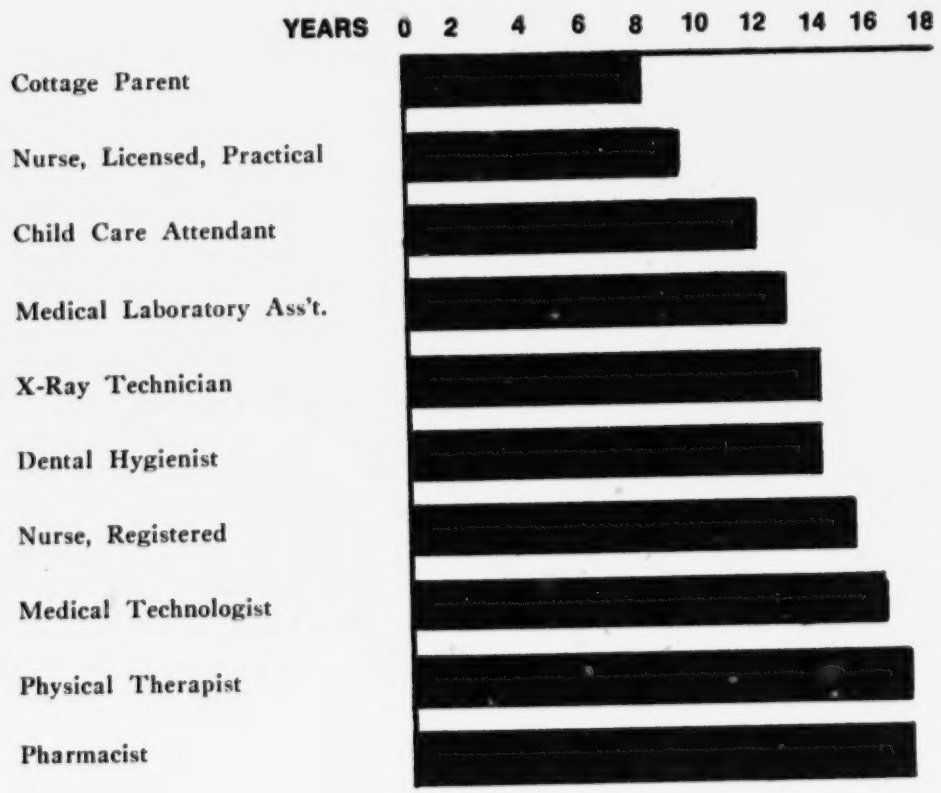
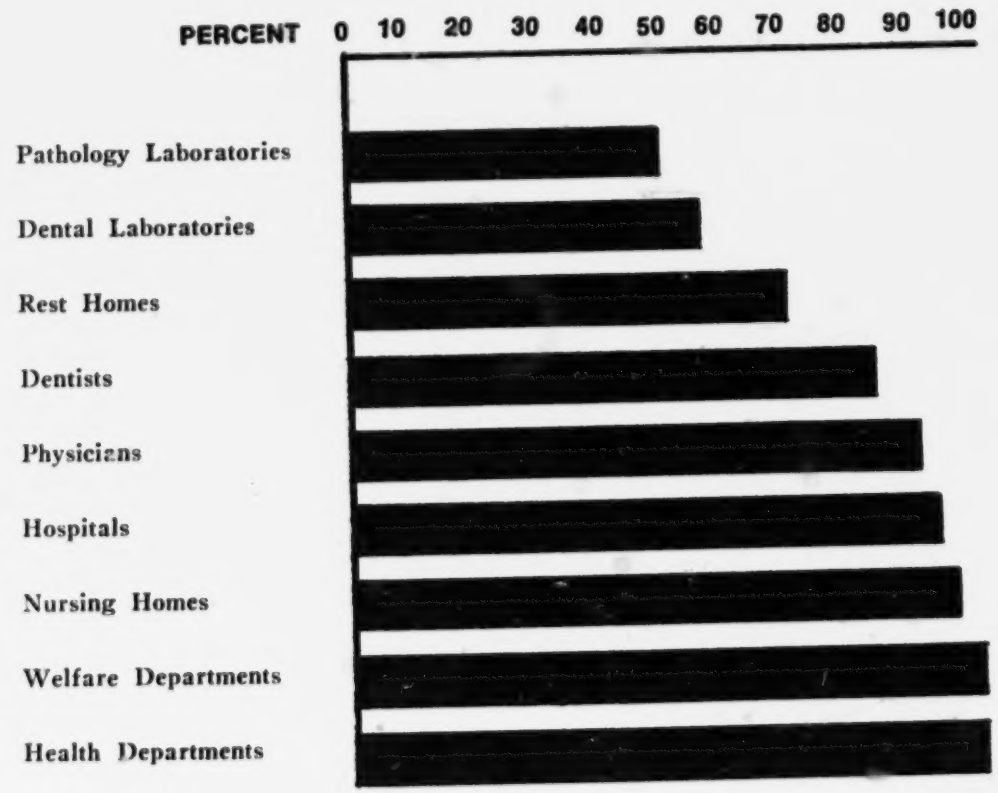


CHART H: PERCENT OF TOTAL RESPONSES FROM MEDICAL AND HEALTH FACILITIES TO THE NUMBER SAMPLED—STATEWIDE



APPENDIX C

Survey Methodology and Scope

SURVEY METHODOLOGY AND SCOPE

During this study, current and anticipated employment data were collected for 48 occupations in over 1,500 medical and health service facilities throughout North Carolina. Considered in the study were (1) all hospitals, nursing homes, and rest homes; (2) all county health and welfare departments; (2) all dental and pathology laboratories covered by the North Carolina Employment Security Law; and (4) a twenty percent sample of physicians and dentists in private practice in North Carolina. To develop supply data, contacts were also made with all public institutions which offer formal training programs in any surveyed occupations.

In addition to the employment data requested, the hospitals, nursing homes and rest homes were asked to provide information on their bed complement, number of beds being utilized and any planned expansions of their present physical facilities.

COLLECTION OF DATA. The initial survey package mailed to each establishment included an introductory letter, and a survey schedule with pre-listed occupations and definitions. After a period of about ten days, personal visits were made to each hospital and nursing home and to each rest home with 30 or more beds, to review and discuss the questionnaire response with the administrator.

Other participants were asked to return the form by mail. After a three-week period, a second request package was mailed to nonrespondents. Copies of the letter and questionnaire are shown on pages 62 and 63. Management officials were requested to forecast total employment needs and selected occupational needs to the spring of 1970 and to the spring of 1973. If employers did not project future employment, survey period employment figures were held constant to each of the survey target dates.

In addition to the data obtained for pre-listed occupations, each schedule recipient was asked to list others which he considered to be "shortage" occupations for his particular facility and to provide the same data for these, as for the pre-listed occupations. These data are not included with the pre-listed occupations, but are presented separately on page 56. Aside from identifying additional current shortage occupations, the information will be useful in plannng future studies.

REPLACEMENT NEEDS. Employers were asked to provide data on replacement needs during the past twelve months, for each surveyed occupation. Replacement needs are defined as needs for workers to replace those who were promoted to another occupation, and those who left the labor force for such reasons as death, retirement, disability, or entry into the Armed Forces. Workers not included in this category are those who voluntarily left to accept other jobs in the same occupation, voluntarily quit, and workers separated involuntarily from the employer because of reduction in force, inadequate performance on the job, or misconduct. One-year replacement data were expanded to estimate replacement requirements for the 1970 and 1973 target dates.

BASIC ECONOMIC ASSUMPTIONS. Employers were asked to assume the following conditions when furnishing the requested information:

1. The population growth will continue to advance at about the present rate, and will give impetus to an expansion of medical and other health services.
2. Trained workers will become available in increasing numbers through expansion of the State Vocational - Technical Education Program and other training agencies.

RESPONSE. Participation was most gratifying as nearly 90 percent of the contacted establishments furnished the requested data. Hospitals, nursing homes and county health and welfare departments had the highest rate of response, as over 97 percent of these medical and health service facilities took part in the study. (See Bar Chart Page 58).

OCCUPATIONAL SELECTION. Occupations for this study were selected with the assistance of other agencies, on the basis of current shortages and anticipated needs for medical and health service establishments. These occupations range from the lower skill jobs to those requiring a college degree. Separate lists of occupations were prepared for each type of medical and health service; therefore, management officials received requests for information pertaining only to occupational needs of that specific establishment.

LOCAL OFFICE ASSISTANCE. The 54 local offices of the North Carolina Employment Security Commission were provided instructions for completing survey questionnaires, and staff members assisted employers in completing schedules when called upon to do so.

SUPPLY DATA LIMITED. As one indication of available supply, the local Employment Security Commission offices were requested to report, for each of the occupations in the survey, the number of unemployed individuals represented in their active application files in early April, 1967. These results are held constant through 1973, and, as a measure of supply, are combined with output from schools and on-the-job training for the target dates.

DATA EDITING AND COMPILATION. As the survey schedules were returned, they were reviewed and edited. After editing, data were tabulated by the Employment Security Commission's Department of Data Processing.

The sample findings were inflated to universe totals and the tables, charts, and analyses were prepared by the Bureau of Employment Security Research staff.

EMPLOYMENT SECURITY COMMISSION
OF
NORTH CAROLINA

COMMISSIONERS
HENRY E. KENDALL, CHAIRMAN
BILLY EARL ANDREWS
HAROLD F. COFFEY
R. DAVE HALL
CHARLES L. HURLEY
J. W. SEABROOK
SAMUEL F. TEAGUE

P. O. BOX 589
RALEIGH, NORTH CAROLINA 27602

April, 1967

Mr. George Doe, Administrator
Central Hospital
2800 Evergreen Street
Charlotte, North Carolina 28200

Dear Sir:

The Employment Security Commission of North Carolina, in cooperation with the State Board of Education, is undertaking a study of the present and anticipated job needs in North Carolina's hospitals and other health service facilities.

The study has as its principal purpose the development of long-range factual data on job opportunities in each local area. With this information, the State Board of Education through its Department of Community Colleges may be better able to plan future educational programs and offer more training in those occupations where unfilled job needs persist.

This plan of action, we believe, will benefit the hospitals and other health service facilities by adding to the available supply of workers having basic training in selected occupations found to be in short supply. Not to be overlooked is the fact that with increased emphasis on training programs, many more unemployed or underemployed individuals would be able to benefit from gainful employment.

We respectfully request your participation to the extent of completing the enclosed survey form and returning it, as soon as possible, in the enclosed pre-addressed envelope. An extra copy of the report form is enclosed for your use along with instructions and occupational definitions. A copy of the survey results will be mailed to you when the study is completed.

Your assistance in developing this occupational information will be appreciated.

Sincerely,

Henry E. Kendall

Henry E. Kendall
Chairman

Enclosures

TRAINEE OUTPUT DATA SHEET 1/

NORTH CAROLINA STUDY OF HEALTH MANPOWER NEEDS

Establishment Data

Establishment Memorial Hospital School of Nursing
Address 876 North Douglas Avenue
City Greensboro **County** Guilford

County Number 41
Area Number 4
Index 1196

Training Data

Code No.	Training Occupation	No. Currently in Training		No. Completing Training			Length of Training Course (Months)	Capacity
		Total	Female	In 1967	By Spring 1970	By Spring 1973		
	Registered Nurse	25	25	9	39	69	36	10 per year

Kathy L Doe — Director — 5/15/67
Person Supplying Information — Title — Date

1/ For other than paid on-the-job training

INSTRUCTIONS FOR COMPLETING SURVEY FORMS

For the purpose of this survey, please assume the following conditions when furnishing the requested information:

1. The population growth will continue to advance at about the present rate, and will give impetus to an expansion of medical and other health services.

2. Trained workers will become available in increasing numbers through expansion of the State Vocational-Technical Education Program and other training agencies.

Item

Section A. (5) Enter here the total number of persons, full-time and part-time, currently on payrolls.

Section B. (6) and (7) Enter here the total number of persons expected to be employed in this establishment 3 and 6 years hence.

Section C. Occupations: The occupational listing may not include all of the occupations in your establishment and may include occupations which you do not use or plan to use in the future. Some of the occupations in your establishment may be included here under a title somewhat different from those used by you. Please study the list and definitions carefully before making your entries. If there are occupations in your establishment not shown in the listing which you expect will have major growth, please enter them on the blank lines.

Columns (10) and (11) Current Employment: Enter in Column 10 the number of workers, excluding trainees, you now employ in each listed occupation. In Column 11 enter the number of women employed in the listed occupation.

Column (12) Current Vacancies: Enter the number of vacancies currently existing in each listed occupation. Include only the number of positions which would be filled were fully qualified workers available for them.

Columns (13) and (14) Additional Worker Needs: Enter in Column 13 the number of additional workers expected to be needed for expansion of services in each occupation during the next three-year period. Enter in Column 14 the number of additional workers needed during the next six-year period.

Column (15) Replacement Needs: Enter in Column 15 the number of workers needed during the past year to replace those who left the occupation because of death, retirement, promotion or to enter the Armed Forces. Do not include those who quit or were discharged. In the event that the past year was not typical for your establishment, please enter the number you judge would be needed or required in an average year in each occupation.

Column (16) Turnover Needs: Enter in Column 16 the number of workers needed in each occupation to replace those who quit or were discharged during the past year. Do not include any of those shown in Column 15.

Columns (17) and (18) Number Completing Training: Enter in the appropriate columns, for each occupation, the number expected to complete on-the-job training programs within your establishment during the next 3 and 6 year periods. This entry is to include only those to be given training in the skills of the occupation and does not consider orientation training alone.

SCHEDULE FOR NORTH CAROLINA STUDY OF HEALTH MANPOWER NEEDS
1967-1970-1973

Employment Security Commission of N. C.
Bureau of Employment Security Research
Post Office Box 589
Raleigh, North Carolina

Establishment Central Hospital
Address 2800 Evergreen Street
City Charlotte County Mecklenburg

County Number 6 0 3
Area Number 1 1 9 5
Index

Information reported on this form is strictly confidential and will not be revealed nor published in such a manner that data relating to individual establishments can be identified.

COMMENTS:

BEFORE ENTERING THE REQUESTED INFORMATION, PLEASE READ THE ATTACHED INSTRUCTIONS

Section A
Present facility was designed for how many beds? - - - - - - - - 300 (1)
Number of beds now being utilized? - - - - - - - - - - - - - - 310 (2)
If an expansion of present facilities is planned, how many beds are expected to be added? - - - - - - - - - - - - - - - - 75 (3)
Approximate completion date of planned expansion? - - - - - - 6/68 (4)

Section B
Number of paid employees currently on payroll? - - - - - - - - 648 (5)
Number of persons expected to be employed by: Spring, 1970? 827 (6)
Spring, 1973? 914 (7)

4/20/67
Date

Administrator
Title

George Doe
Name of Individual Providing Data

Section C

OCCUPATIONAL DATA SHEET

Index 1195

Code No.	Occupational Title	No. Currently Employed in This Occupation		Current Vacancies in This Occupation	No. of Additional Workers Needed for Expansion of Services by:		Replacement Needs 1/	Turnover Needs 2/	No. Expected to Complete On-The-Job Training Within Establishment by:	
		Total	Female		Spring 1970	Spring 1973	Last 12 Months	Last 12 Months	Spring 1970	Spring 1973
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
30	NURSE, REGISTERED	130	128	11	15	19	4	46	0	0
28	NURSE, LICENSED PRACTICAL	48	48	6	8	10	3	12	0	0
27	NURSE, AID	79	79	2	11	13	2	38	8	16
33	ORDERLY	25	0	2	4	6	4	15	5	10
40	PSYCHIATRIC AID									
45	SURGICAL TECHNICIAN	5	5	3	8	9	2	3	6	8
46	WARD CLERK	16	16	2	2	3	0	14	2	3
15	HOUSEKEEPER	2	1	0	1	1	1	2	1	2
39	PORTER	8	0	3	4	4	0	14	4	4
47	WARD MAID	24	24	4	4	5	1	16	4	8
26	MEDICAL TECHNOLOGIST	6	6	2	3	4	1	2	0	0
20	MEDICAL LABORATORY ASSISTANT	2	2	1	2	2	0	2	1	2
08	CYTOTECHNOLOGIST	1	1	1	1	1	1	0	0	0
13	ELECTROCARDIOGRAPH TECHNICIAN	2	2	0	1	1	1	0	0	0
14	ELECTROENCEPHALOGRAPH TECHNICIAN	1	1	1	2	2	1	0	0	0
41	RADIOLOGIC TECHNOLOGIST (X-RAY TECH.)	7	6	1	2	3	1	2	2	4

1/ Job vacancies occurring in last 12 months resulting from death, retirement, promotion, or other known labor force withdrawals.
2/ Job vacancies occurring in last 12 months resulting from turnover (quits, discharges, etc.) excluding any shown in column 15.